

Public Utilities

FORTNIGHTLY



Greetings AGA 32ND ANNUAL

CONVENTION OCTOBER 2 - 6, 1950

105
October 12, 1950

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as seen from regulatory,
executive and other viewpoints

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Public Utilities

FORTNIGHTLY

VOLUME XLVI

OCTOBER 12, 1950

NUMBER 8



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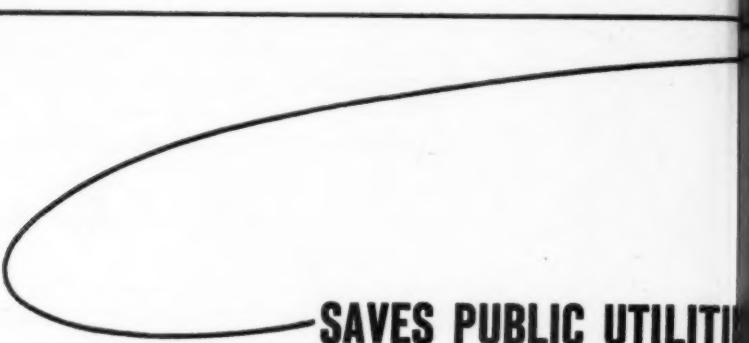
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... funds for Federal and state regulation of both privately owned and operated utilities and publicly owned and operated utilities, on a fair and nondiscriminatory basis; for nondiscriminatory administration of laws; equitable and nondiscriminatory regulation; and, in general—for the perpetuation of the free enterprise system. It is an open forum for the free expression of opinion concerning public utility regulation and allied topics. It is supported by subscription and advertising revenue; it is not the mouthpiece of any group or faction; nor is it under the editorial supervision of, nor does it bear the endorsement of, any organization or association. The editors do not assume responsibility for the opinions expressed by its contributors.

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Pages with the Editors

WAR clouds which loom in the wake of Korea make it all the more important for the utility industry people to meet and talk shop while they still have a chance to hold unrestricted national business assemblies. The thirty-second annual convention of the American Gas Association will feature an impressive array of gas industry resources. We welcome the opportunity of devoting this issue of PUBLIC UTILITIES FORTNIGHTLY to feature articles and other materials of special interest to the gas industry in both its operating and manufacturing branches.

LEADING off this special issue is an exclusive message prepared for us by HUGH H. CUTHRELL, president of the American Gas Association and vice president of Brooklyn Union Gas Company. Born in Winston-Salem, North Carolina, and educated at the University of North Carolina (BA, '15), Mr. CUTHRELL entered the ranks of public service industry as a cadet engineer with the Kings County Lighting Company in 1921. He became a distribution engineer with the Brooklyn Union Gas Company in 1927 and became vice president of that organization in 1936.



HUGH H. CUTHRELL

OCT. 12, 1950

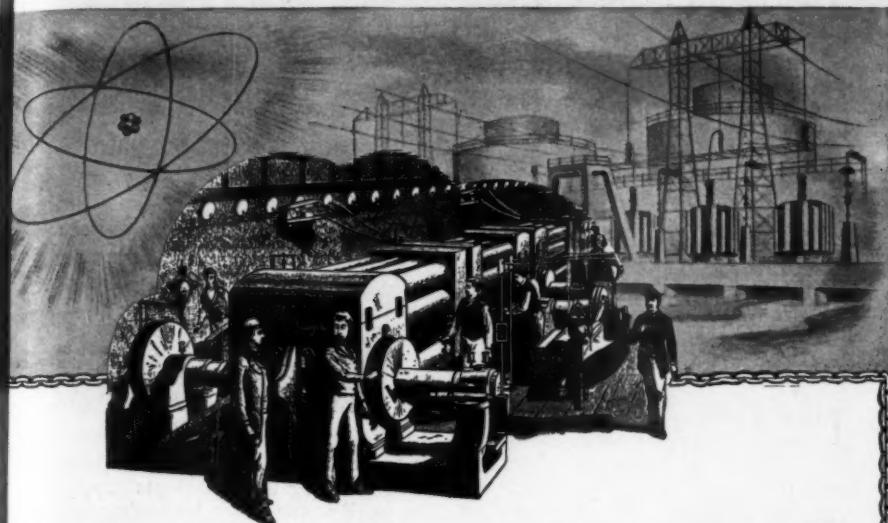


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ROBERT S. KERR

THERE is little doubt that as far as Federal legislation is concerned the principal topic of interest in the gas field is the Kerr Bill. Will this measure, passed last spring by Congress only to be vetoed by President Truman, be revived in the next Congress? Or will alternative measures be necessary? Obviously, the best qualified individual to write on that subject is the author of the bill, SENATOR ROBERT S. KERR, Democrat of Oklahoma, who has given us a careful analysis of the issues involved in his fight to remove independent gas production and gathering from the jurisdiction of the Federal Power Commission.

SENATOR KERR was born in the town of Ada in the old Oklahoma Indian territory. He attended Oklahoma Baptist University as well as Oklahoma University. He has had a rich and varied experience: a practicing attorney; a drilling contractor; Second Lieutenant in the First Field Artillery in World War I, with overseas duty; and more recently president of Kerr-McGee Oil Industries, Inc. He was elected governor of Oklahoma in 1943 and United States Senator in 1948.



Is your financing program attuned to the times?

• Scientists once marveled at these "Jumbo" dynamos which were installed in the first Edison Electric Lighting Station in New York City. Yet you could scarcely visualize them in the modern plant of today.

Financing programs can become outmoded, too—more rapidly than you might think. Has your organization an

up-to-date approach to the financial community—a comprehensive program fully geared to meet today's changing conditions?

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ASPECIAL feature in this issue (beginning on page 493) is a symposium of views by leading executives of operating gas companies throughout the United States. They were asked to give their individual opinions on the most pressing problem facing the industry during the coming year. Certain points of agreement, as well as the variety shown in these viewpoints, are quite revealing. They indicate which questions weigh most heavily in the minds of the gas industry's key managerial leaders. But they also demonstrate the alertness of these executives in taking their bearings.

* * * *

JOHN H. WOLFE, whose article on the recent changeover to natural gas in Baltimore city begins on page 481, studied engineering at Iowa State College and graduated (BS, '12) from the University of Wisconsin. He received his cadet training in Rockford, Illinois, at the Rockford Gas Light & Coke Company and saw service as a Navy Ensign during World War I. He joined his present organization, Consolidated Gas Electric Light & Power Company of Baltimore in 1919 as superintendent of gas manufacturing. He became general superintendent of gas operations in 1938 and was elected vice president last March. He has been quite active in fraternal, professional, and industrial association activities.



JOHN H. WOLFE

PROBLEMS of smaller gas companies in converting to natural gas supply are featured in the article beginning on page 501 by KENNETH D. KNOBLOCK, president of Wisconsin Southern Gas Company of Burlington, Wisconsin. MR. KNOBLOCK is a native of Chicago with twenty-two years' experience in public utility operation, engineering, and sales work. A graduate of the University of Illinois (BS, '27) he became a registered professional engineer and has been active in several utility enterprises. He was employed by the American Utilities Service Corporation, of which he became vice president and chief engineer in 1940. He organized the National Telephone Company, and subsidiaries, and served as its president for several years. He is also a director and vice president of County Gas Company of New Jersey.

* * * *



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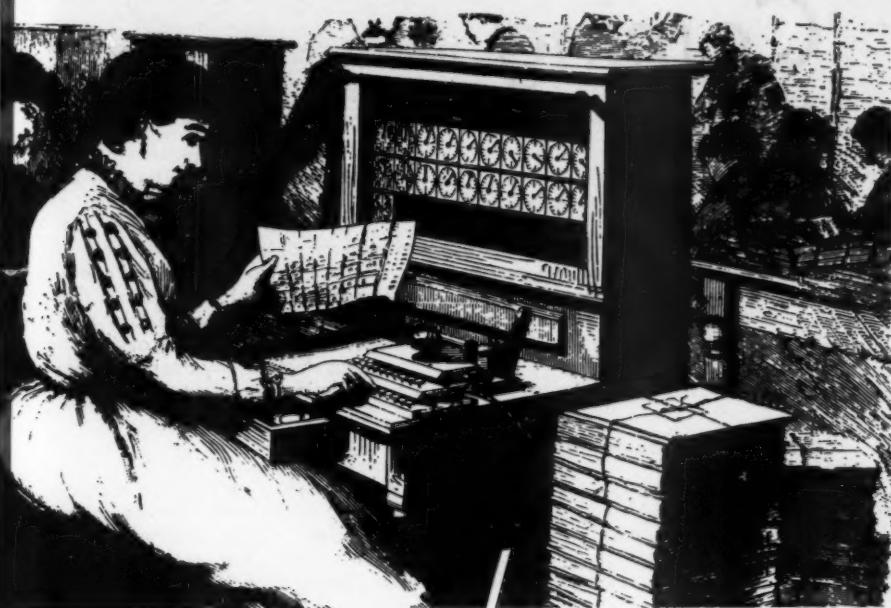
LARSTON D. FARRAR

OCT. 12, 1950

GAS companies as well as other public utilities will be interested in the article about how higher taxes, especially the proposed excess profits tax, will affect them (beginning page 516). The author is CHARLES WIGAND, now associated with Commonwealth Services, Inc., of New York city.

THE next number of this magazine will be out October 26th.

The Editors



Courtesy Bettmann Archives

Gay Nineties Review

HIS old print shows a young woman operating one of the electric computing machines during the U. S. Census in 1890.

Each time she depressed a key on the table, an impulse would be registered on one of the corresponding dials on the board in front of her. This cumbersome machine, no doubt, saved many hours and dollars for Uncle Sam.

Great strides have been made in counting machines since the Gay Nineties.

In the utility field, for example, there is this ingenious computer—the Bill Frequency Analyzer. It can help give you an accurate picture

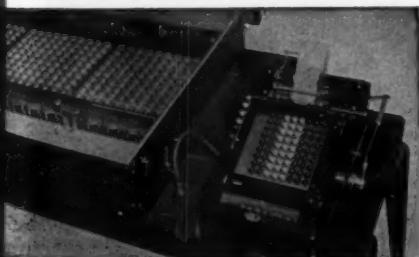
of your consumers' usage situation in a short time.

The Bill Frequency Analyzer classifies as many as 200,000 bills in a single day. It can save you approximately $\frac{1}{2}$ the cost of having the work done in your own offices.

Why not find out more about this remarkable service?

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"The One Step Method of Bill Analysis" tells more about this accurate and economical method of compiling consumers' usage data. Why not send for it now?



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Coming IN THE NEXT ISSUE



The Importance of Utility Taxes

It is not popularly realized that the government obtains more money from public utilities than the people who own them. In other words, Federal, state, and local taxes often take a larger percentage of the revenues than the security holders obtain by way of interest and dividends. Sidney P. Allen, financial columnist of San Francisco, has made a study of the tax burden imposed upon the customers of various public utility operating companies and has drawn some interesting conclusions.

The Rôle of Accounting in Public Utility Regulation

During the past two decades public utility accounting has taken on a unique significance. Instead of a means to an end it has apparently become an end in itself. Instead of a tool of regulation it has become the dominant factor, and in some places has become the exclusive basis for rate making, depreciation, and other regulatory functions. Dr. J. Rhoads Foster, nationally known authority on public utility accounting, has prepared for us a series of three articles dealing with this interesting development. In the first instalment he deals with accounting as an instrument for regulation.

They Were Not "the Good Old Days"

Public utility operations have become so technically specialized in recent times that the problems of the pioneers have become obscured through the years. Ernest R. Abrams, financial and business writer of New York city, has done some research on the experiences of some of the old-timers, who thought nothing of "doubling in brass." They had plenty of troubles in the days when utility operations were a form of curiosity and when management had to start from scratch, with no established techniques for a guide.

New Public Utility Laws—Coming Up in 1951

Next January, forty-four state legislatures will meet in regular sessions and there will also probably be special sessions in some states. Of special interest to utilities should be this effort to appraise the likelihood of legislation affecting public utilities. It is the product of a veteran reporter and analyst of legislative trends, Bethune Jones of Red Bank, New Jersey. He also covers proposals which were made in several of the legislative sessions in the current year.



Also . . . Special financial news, digests, and interpretations of court and commission decisions, general news happenings, reviews, Washington gossip, and other features of interest to public utility regulators, companies, executives, financial experts, employees, investors, and others.

As a major underwriter of new utility issues throughout its history, The First Boston Corporation is well qualified to assist executives of gas and electric companies in planning and executing their financial programs.

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Remarkable Remarks

"There never was in the world two opinions alike."

—MONTAIGNE

WESTBROOK PEGLER
Columnist.

"Socialism is only Communism with a long fuse . . ."

M. E. COYLE
*Executive vice president, General
Motors Corporation.*

"The people who made us big will whittle us down to size if we do not give them good products."

JOSEPH E. MOODY
*President, Southern Coal Producers
Association.*

"Industry-wide bargaining will sooner or later lead down the road to Socialism and nationalism."

G. MENNEN WILLIAMS
Governor of Michigan.

"Entrenched bureaucracy, without clear lines of responsibility, can be as destructive of liberty as an individual dictator."

DONALD K. DAVID
*Dean, Harvard Graduate School
of Business Administration.*

"Responsible leadership—in individual companies and in the nation as a whole—will mold the future of America and its business economy . . ."

WILLIAM RANDOLPH HEARST
Publisher.

"The idea of keeping the best men in public life, not for their own benefit, but for the benefit of the nation, is something which we must consider carefully."

BRUCE BARTON
Columnist.

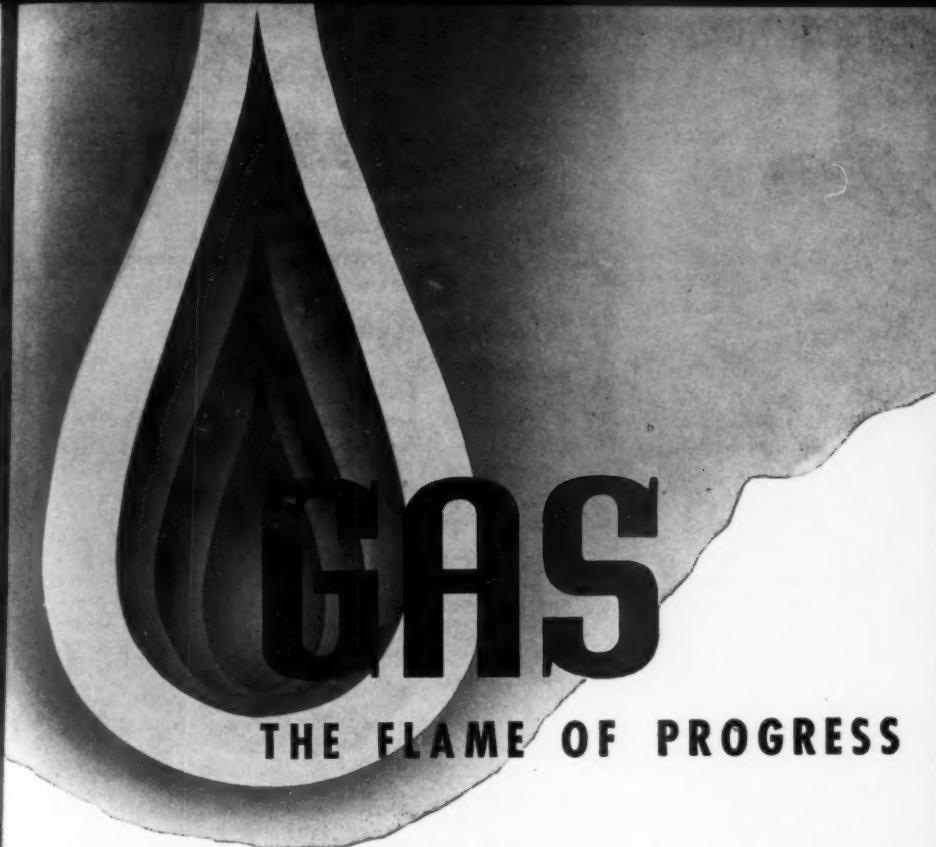
"We Americans are losing the cold war because the leaders of Communism believe in Communism, while the political leaders of our capitalistic country do not believe in Capitalism."

CLIFFORD F. HOOD
*President, Carnegie Illinois
Steel Corporation.*

"It is the duty of every one of us to do the utmost to acquaint the ordinary man and woman with the serious consequences which flow from excessive taxation. People are prone to demand almost unlimited services from their government without giving the slightest attention to the fact that ultimately they themselves pay the cost of government."

JAMES C. DAVIS
U. S. Representative from Georgia.

"We all cherish our rights and they must be protected. We all treasure our freedom and it must be vigilantly guarded. But these rights will not survive, nor will this freedom long continue, unless those who enjoy them daily perform the tasks required for their protection and preservation. They are not self-perpetuating. They can be kept and rightly belong only to those who have the courage, the industry, and the determination to guard and defend them."



GAS

THE FLAME OF PROGRESS

Man's discovery of the use and control of fire marked the beginning of civilization. And his continuous refinements of that use and control have been reflected in his increasing mastery of his environment.

With the magic servant Flame at his command, man has wrought to his will the stubbornness of steel, reduced the dread ocean to a pleasant highway, and launched into the pathless sky giant craft that have shrunk the boundaries of the world.

And this same obedient servant—gas flame—preserves his food, cooks it as *only* gas can cook it, supplies him instantly with hot water, dries his weekly wash, and provides him with year-around automatic air conditioning.

Small wonder, then, that *flame* has become a synonym in every language for speed, power, wisdom—and progress!

The American Gas Association may well be proud that it represents all the mighty achievements of the gas industry—and that it will guide that industry through an increasingly important role in the nation's future.

THE BROOKLYN UNION GAS COMPANY

REMARKABLE REMARKS—(Continued)

LESLIE GOULD
Columnist.

"Strikes don't make sense. The strikers and consuming public pay the bill—the former in lost wages, which they never can make up, and the latter, which also includes the strikers, in higher prices."

EDITORIAL STATEMENT
The Wall Street Journal.

"... when a government operates an economic activity the fact of loss and of subsidy by general taxes is accepted as part of the natural order of things. The only matter to debate is how much of a loss is 'proper.'"

MERRYLE S. RUKEYSER
Columnist.

"It should not be forgotten that in our race for survival as a free people our number one asset is our capacity to make things well and quickly. . . . It should not be impaired to any degree by imposing bureaucratic control over management effort."

WILLFORD I. KING
Chairman, Committee for Constitutional Government, Inc.

"The vital principle which every legislator and government executive should keep in mind at all times is that untrammeled competitive price is the only force yet discovered which is powerful enough to direct production into the channels which will best serve the public."

LAWRENCE FERTIG
Columnist.

"At the heart of all important government policies is the money policy. Cheap money today means inflation—that is a statement which no informed person denies. And everyone knows that it is impossible for the government to create cheap money without industry using that cheap money for expansion of all kinds, thus increasing demand and raising prices."

W. W. CUMBERLAND
*Partner, Ladenburg,
Thalman & Co.*

"One frequently hears that if private capital will not flow abroad then the Federal government must make loans and investments in underdeveloped countries. Why has the government a right to take risks which are rejected as excessive by experienced persons who invest their own funds? No great genius is required to lose money. If foreign loans and investments are not profitable the recipient countries fail to benefit, at the same time that the wealth of the United States is wasted. This helps no one."

EDITORIAL STATEMENT
The Saturday Evening Post.

"If there is considerable suspicion around that Korea is intended to be the grave of the American free economy, the fault is surely the administration's. An administration which has moved heaven and earth to bring about the adoption of all sorts of semisocialistic measures and relies on the advice of neo-Keynesian economists and soothsayers can hardly complain if some people smell a rat. The temptation to use the Korean war as a pretext for permanent changes in our economy is real enough, and there are plenty of planners in the government departments who are eager to yield to it."

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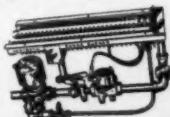
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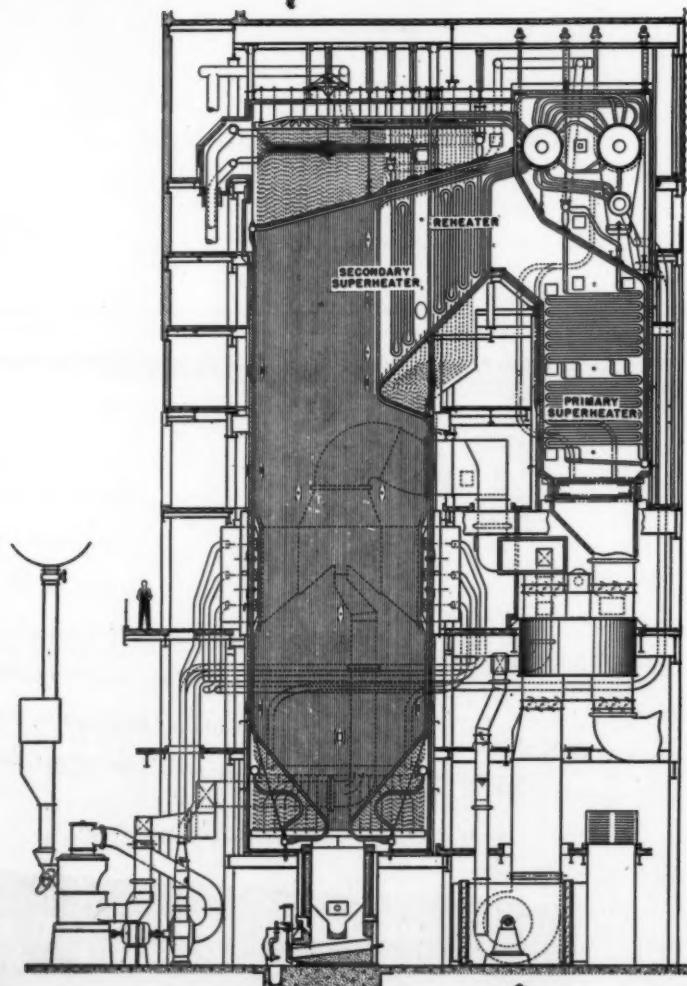


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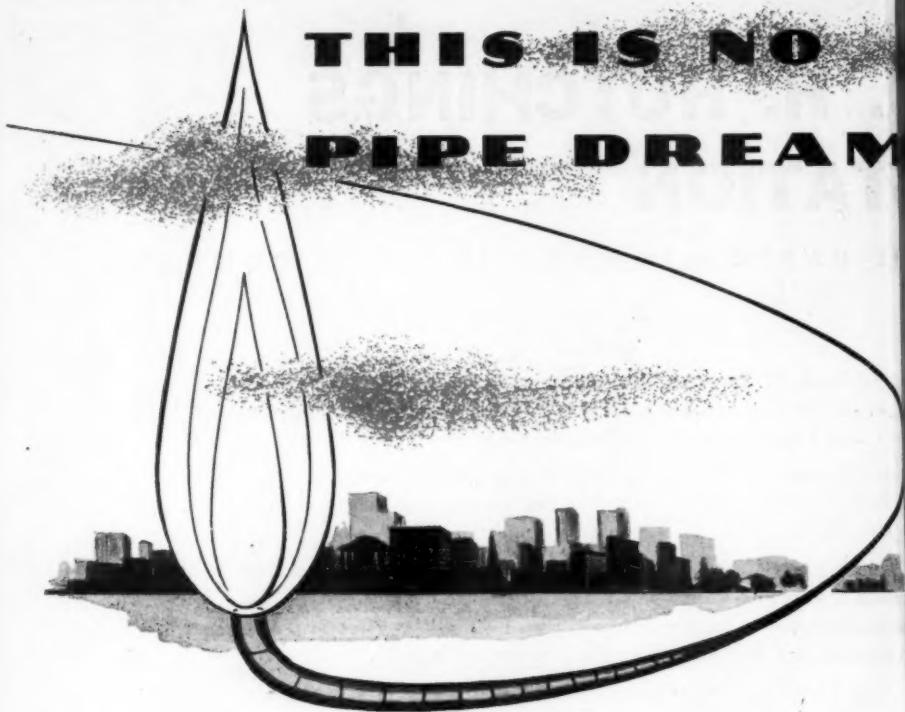
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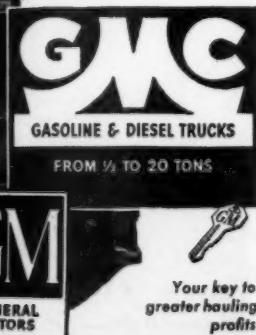
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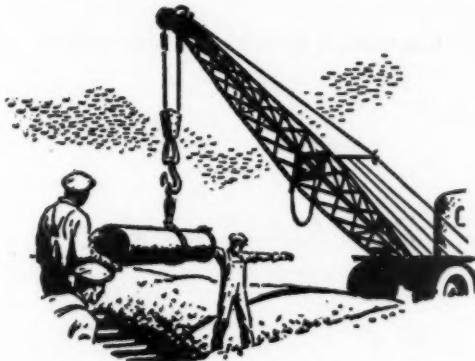
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FULL-PRESSURE LUBRICATION with rifle-drilled connecting rods which forces oil to full-floating piston pins.



In Southeastern Pennsylvania . . .

**GAS HAS GROWN
WITH THE COMMUNITY**



During the past year, the demands for gas in Southeastern Pennsylvania have been greater than ever before. It has been necessary to greatly expand our services to keep pace with the rapid growth of new homes and industries.

The receipt of natural gas through the "Big and Little Inch" pipe lines has produced additional capacities, and represents a forward step in the policy of The United Gas Improvement Company, and its subsidiaries, to provide the finest gas service at the lowest possible cost.

We extend cordial greetings to the members and guests of the American Gas Association at its convention in Atlantic City, the week of October 2nd, 1950.

THE UNITED GAS IMPROVEMENT COMPANY
Philadelphia, Pennsylvania

This announcement is neither an offer to sell nor a solicitation of an offer to buy these securities. The offer is made only by the Prospectus.

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September 21, 1950.



Southern Union Gas Company is proud to be a part of the great Southwest . . . to develop with this area and at the same time, contribute to its growth and progress. In New Mexico, Colorado and Texas, more than 175,000 customers in 41 towns and cities enjoy the convenience and efficiency of Natural Gas, provided by Southern Union.

From the Southwest, Southern Union sends greetings to the American Gas Association at its thirty-second annual convention in Atlantic City, October 2-6, 1950.



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Company

"Helping Build the Great Southwest"

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EVERYTHING for the Gas Industry

► Koppers Company offers a new, unified service comprising consultation, design, manufacturing, construction and maintenance — all now coordinated under the direction of the company's Engineering and Construction Division.

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Precipitators
Condensers

Catalytic Reforming
Oil Gas (High Btu)
Blue Gas
High-Pressure Boilers
Dry Purification
Water Seal Holders
Compressor Stations
Scrubbers (Light oil,
Gum, Naphthalene)

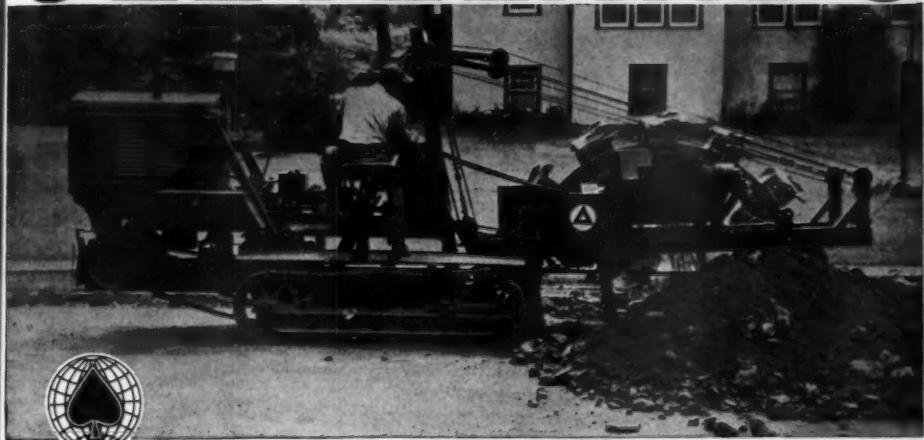
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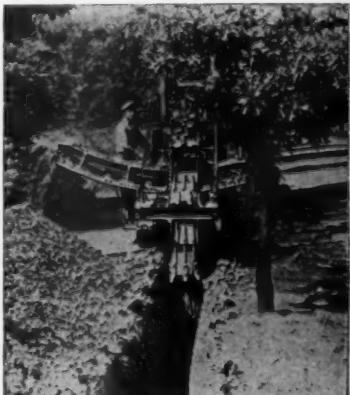


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DAYTON grows with Gas

Population growth in Dayton is almost twice the national rate, and effective buying power is approximately 16% higher than the national average. These facts, in a measure account for some of the following

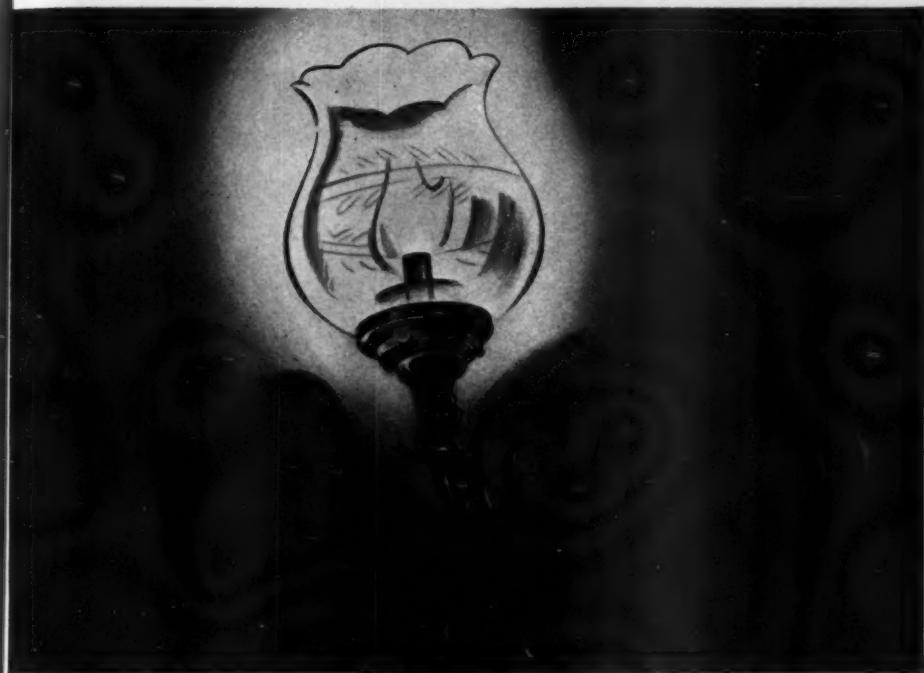
NATURAL GAS FACTS FROM OUR 1949 ANNUAL REPORT

- 12,400 central heating units were installed in 1949
- 52.5 miles of gas mains (including replacements) were laid in 1949
- \$1,312,200 were spent in 1949 for the construction of gas facilities
- Total gas sales in cu. ft. in 1949—more than twice as much as in 1940
- Number of gas customers increased by 36% over 1940
- Average sales to residential customers increased over 46% since 1940
- Gas system peak day load has more than doubled since 1940

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The gaslight era is far in the past—and today gas enjoys wide usage in both industry and home. We at Fiberglas* like to feel that glass has helped in this progress.

Not glass in the forms in which you usually think of it, but as fibers that are fine, flexible and strong . . . that are permanent, sanitary and incombustible. Glass that does jobs glass never did before . . . glass in the form of Fiberglas products.

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Thousands of miles of pipeline are now corrosion protected with Fiberglas COROMAT† Under-ground Pipe Wrap.

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Fiberglas Insulations help appliances (ranges, refrigerators, water heaters, furnaces) give greater satisfaction. They insulate the home itself. And Fiberglas Dust-Stop‡ filters clean the air in forced warm air heating systems.

So—Owens-Corning Fiberglas Corporation is a partner with the gas industry—all the way from the well to the home—in creating a better standard of living for all of us.

Get better acquainted with Fiberglas products at the Gas Appliance Manufacturers' Assn. and American Gas Assn. National Convention at Atlantic City, October 2 to 6. A warm welcome awaits you at Booths 729-32.



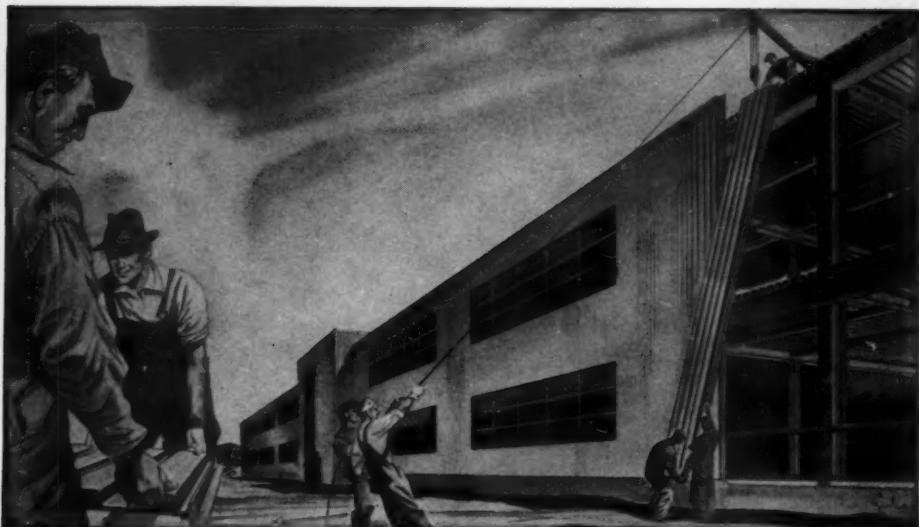
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it's faster to hang a wall than to pile it up...

Little blocks, say 2" x 4" x 8", don't pile up very fast.

We hang walls up in sizable panels.

And that is an easy way to understand why Robertson's real product is *time*.

We make walls that are hung in place. We make them complete with insulation when the panels are delivered. We engineer them piece by piece in advance at the factory. We put expert crews on the job to place them.

We make time, now, when time is the essence.

We save days and weeks in finishing a building for use, because years have been put into the development of these unique skills.

Quick is the word we practice.



Q-Panels are fabricated from Galbestos, aluminum, stainless steel, galvanized and black steel in lengths up to 25'.

Q-Panels, 3" in depth with 1 1/4" of incombustible insulation, have a thermal insulation value superior to that of a 12" dry masonry wall with fired plaster interior. A single Q-Panel with an area of 50 sq. ft. can be erected in nine minutes with a crew of only five men, and twenty-five workmen have erected as much as an acre of wall in three days.

Q-Panel construction is quick, dry, clean, and offers an interesting medium of architectural expression.

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Rheem Gas Water Heaters Now Equipped With Twin Anodes*

**Exclusive Corrosion Protection
Added To Other Design Features!**

Twin Anodes Double Protection against rust and corrosion. Installed prior to final assembly. Every portion of the tank is safeguarded with this protective coating . . . "flue shadow" is eliminated. If replacement is ever required, new anode may be easily installed in hot water outlet.

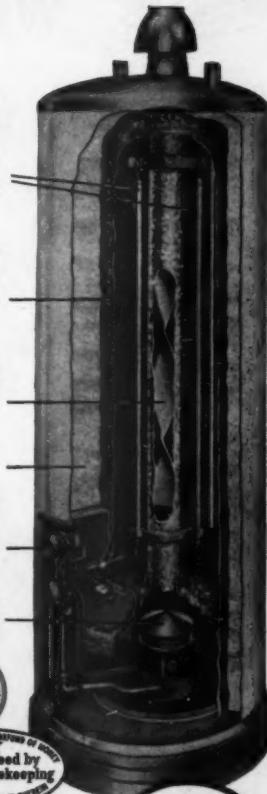
Rheem-Process Tank For Additional Security —the patented (Patent No. 2444833) Rheem-Process tank, together with Twin Anodes, gives utmost protection against corrosion and leakage.

Fast Heating Flue Baffle—scientific reverse spiral design permits fast uniform transfer of heat to water . . . increases fuel economy.

Fiberglas Insulation completely surrounds tank, cuts heat loss to minimum.

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**Compact, Drilled, Port-Type Burner Assembly
Has High Efficiency**—may be easily removed and disassembled for cleaning.



*Twin Anodes are standard equipment on
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Even when jobs are "poles apart"...

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... for low-cost transportation

POWER: . . . 8 great truck engines—each "Job-Rated" for *PLUS* power.

ECONOMY: . . . priced with the lowest. "Job-Rated" for dependability and long life.

BIGGER PAYLOADS: . . . carry more without overloading axles or springs because of "Job-Rated" *WEIGHT DISTRIBUTION*.

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WHETHER YOU'RE putting up new power lines or making emergency repairs, there's a Dodge "Job-Rated" truck to save you money!

Your Dodge truck will be "Job-Rated" from engine to rear axle to fit the load and road conditions of your particular job. It will have an engine that's "Job-Rated" to give you plenty of power with top-notch economy.

Small wonder, then, that you'll save money on gas, oil, and upkeep!

And remember, Dodge "Job-Rated" trucks are priced with the lowest in every weight class! See your Dodge dealer today . . . for a truck that's "Job-Rated" to cut costs!



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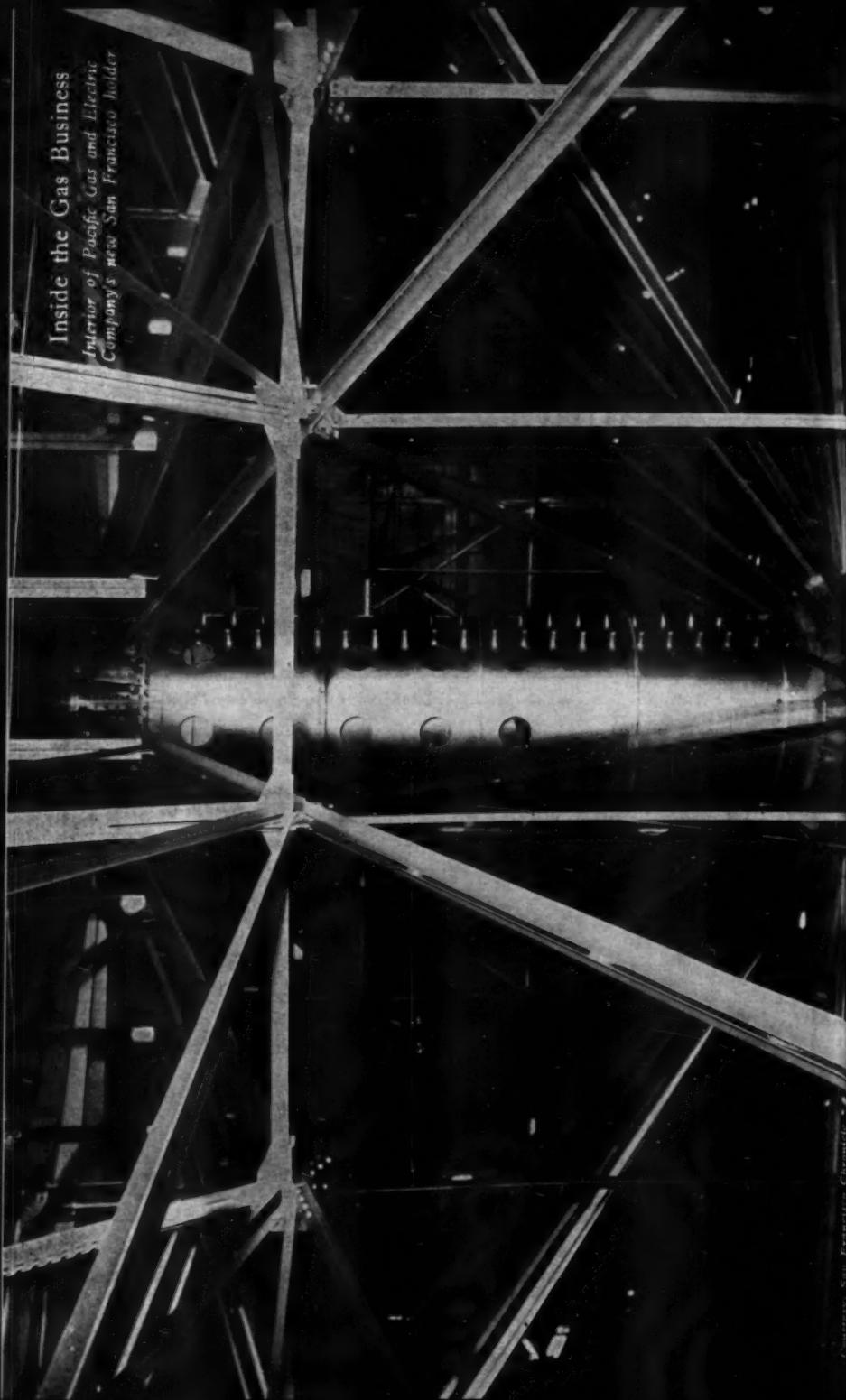
Utilities Almanack

OCTOBER

12	T ^h	1 Structural Engineers' Association of California begins meeting, Coronado, Cal., 1950.
13	F	1 Southern Gas Association, Meter Reading Section, begins meeting, Little Rock, Ark., 1950.
14	S ^a	1 International Association of Electrical Leagues ends annual conference, Boston, Mass., 1950.
15	S	1 American Water Works Association, Southwest Section, begins annual meeting, New Orleans, La., 1950.
16	M	1 North Carolina Independent Telephone Association begins annual convention, Pinehurst, N. C., 1950.
17	T ^u	1 New England Gas Association begins appliance servicing conference, Boston, Mass., 1950. 3
18	W	1 National Farm Electrification begins conferences, St. Louis, Mo., 1950. 1 American Water Works Assn., Pennsylvania Sec., begins meeting, Pittsburgh, Pa., 1950.
19	T ^h	1 Edison Electric Institute, Transmission and Distribution Committee, begins meeting, New York, N. Y., 1950.
20	F	1 Engineers' Council for Professional Development begins meeting, Cleveland, Ohio, 1950. 1 National Safety Congress and Exposition ends, Chicago, Ill., 1950.
21	S ^a	1 National Broadcasting Corporation ends annual affiliates' meeting, White Sulphur Springs, W. Va., 1950.
22	S	1 Advertising Federation of America begins tenth district convention, Amarillo, Tex., 1950.
23	M	1 American Institute of Electrical Engrs. begins meeting, Oklahoma City, Okla., 1950. 1 Independent Natural Gas Association begins annual meeting, Houston, Tex., 1950.
24	T ^u	1 New England Gas Association, Operating Division, begins meeting, Providence, R. I., 1950.
25	W	1 Southeastern Electric Exchange begins sales conference, Atlanta, Ga., 1950. 2

Inside the Gas Business

Interior of Pacific Gas and Electric Company's new San Francisco holder



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YOUTH'S FORTNIGHTLY

Public Utilities

FORTNIGHTLY

VOL. XLVI, No. 8



OCTOBER 12, 1950

Forging Ahead in 1950

Despite the recent complications of another warlike atmosphere, the progress of the gas industry during the current year of 1950 is clearly demonstrated by heavy expenditures for new construction as well as expansion of existing facilities. Most of all, the industry is making obvious headway towards better understanding of its multiple problems.

By HUGH H. CUTHRELL*
PRESIDENT, AMERICAN GAS ASSOCIATION

A YEAR ago, in these pages, Robert W. Hendee, then president of the American Gas Association, predicted that the gas industry might then be on the threshold of its greatest expansion period. The records for 1950 are more than proving the validity of Mr. Hendee's prediction.

The association's bureau of statistics recently released an estimate that placed the gas industry's expenditures for new and expanded facilities at \$3,140,000,000 in the 5-year period

from 1950-1954. Of this total approximately \$2.75 billion will be spent by the natural gas industry and \$388,000,000 by other branches of the gas industry.

The gas industry in 1949 spent a record \$959,200,000 in construction and expansion of facilities. In 1950, it is conservatively estimated that the industry will spend about \$1,066,400,000. This will be the first time in its history that the industry has spent a billion dollars in a single year for expansion costs. While the major part of this money will be spent by the natural

*For additional personal note, see "Pages with the Editors."

PUBLIC UTILITIES FORTNIGHTLY

gas industry, other branches of the industry, particularly those receiving, or shortly expecting to receive, natural gas, plan important expansions in facilities.

DURING 1949, the Federal Power Commission authorized construction of approximately 7,500 miles of new pipeline which will bring new gas facilities to or augment present supplies of more than 100 cities of 50,000 or more population. Authorizations to date in 1950 are running almost equal to last year. The end of 1950 will see the completion of the 1,840-mile natural gas pipeline of the Transcontinental Gas Pipe Line Corporation, which will bring natural gas from Texas to metropolitan New York. Other lines in the Middle West and on the West coast are expanding tremendously.

Despite this rapid growth of our national pipe-line system, the nation's natural gas reserves have more than kept pace. The AGA Committee on Natural Gas Reserves reported that at the beginning of 1950, proved recoverable reserves of natural gas reached an all-time peak of 180.4 trillion cubic feet, compared with 174.9 trillion cubic feet a year earlier. Production of natural gas in the United States during 1949 was approximately 6.5 trillion cubic feet. The rate of expansion of natural gas reserves continues to exceed total consumption.

Total sales of gas, total revenues from sales of gas, and total gas customers, all have continued to gain steadily during the first three-quarters of 1950. Customers have been added in the newer fields of gas all-year air conditioning, gas incineration, and gas

laundry drying, as well as in the basic fields of gas cooking, water heating, refrigeration, and gas house heating.

THE rapid expansion of natural gas facilities has been responsible in some measure for the lifting, either wholly or in part, of existing restrictions on additional house-heating installations. The AGA Bureau of Statistics has just completed a survey which showed that the gas industry hopes to add more than 2,640,000 gas house-heating customers in the next three heating seasons to the 7,217,000 residential gas house-heating customers it now serves.

The survey covered 295 gas utility companies serving 19,240,000 customers or approximately 90 per cent of all residential customers in the country.

These companies estimated they would serve an additional 1,013,000 gas house-heating customers during the 1950-51 heating season, with 853,000 and 774,000 house-heating customers to be added in each of the two subsequent heating seasons. These estimates were made before the outbreak of the Korean war and could be affected by shortages of steel for heating equipment or pipelines.

Progress in the gas industry has not been confined to gains in volume, revenues, and customers. Substantial advances have been made in fields of research, promotion, and advertising, all designed to improve the production and the utilization of gas. By the end of this year, since the inception of the program, the gas industry in the United States will have spent through its Promotion, Advertising, and Research (PAR) Plan, more than \$9,-

FORGING AHEAD IN 1950

\$100,000 in achieving modern industrial progress.

More than \$3,600,000 of this sum, over a period of six years, has been spent in a research program that has brought innumerable technical advantages to gas utilities and their consumers.

Appliance improvement has been an important goal in this program. Through research projects devoted to venting, heat distribution, burner design, and control, to mention only a few of the more than twenty domestic gas research projects being carried out, gas customers have been assured of appliances that present the ultimate in efficiency as well as beauty.

THE industry is working continuously to strengthen its competitive advantages in domestic appliances. An example of this is seen in the work now being carried on in a project in gas ignition which will add to the modernity of the gas kitchen. Today, in co-operation with appliance and controls manufacturers, field tests of automatic ignition systems on gas ranges are being carried on all over the United

States. The ultimate objective of the program is to an automatic ignition system that will consume no energy when not in use.

National advertising and promotional efforts during 1950 met with marked success. The close integration of efforts of the association, the gas utilities, appliance manufacturers, and dealers has enabled the industry to match its competition in advertising and promotional efforts. The campaigns instituted by the AGA Promotional Bureau and carried on by the united gas industry lifted sales of gas appliances to new levels.

The association has set a goal of 1,500,000 gas range sales for its Old Stove Roundup this year. The start of hostilities in Korea and the subsequent preparedness measures have clouded the outlook for the remainder of the year. Shortages of steel and other materials can be expected and the production of appliances may be somewhat restricted. The gas industry, however, stands ready to contribute any part or all of its facilities to help preserve the rights of free citizens throughout the world.

"Our early leaders had a great appreciation of the homely virtues of thrift and humility and of the doctrine that the government is best which governs least. While it is natural that in this day and age after two wars our government should assume more of the social responsibility, it is very questionable whether the measure it is now assuming is in the best interest of the nation's welfare...."

"The young and middle-aged groups in our nation have lived in an era of a paternalistic government. It would not be accurate to say they knew of no other type of government but it is a factual statement that during their lifetime they have had a government that more or less feels it must provide for all the wants of the people."

—HENRY H. HEIMANN,
Executive manager, National
Association of Credit Men.

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The Fight to Free Independent Gas Producers Must Go on

Last April, President Truman vetoed a bill passed by the 81st Congress to exempt independent producers and gatherers of natural gas from the jurisdiction of the Federal Power Commission. The author of this bill tells us why such legislation is still needed to carry out the original intent of the Natural Gas Act and assure the nation of a strong and flourishing independent gas industry.

BY THE HONORABLE ROBERT S. KERR*
U. S. SENATOR FROM OKLAHOMA

THE outbreak of the Korean war necessarily means many things to many people responsible for the protection of our national security. Here on the home front it means husbanding our natural resources and encouraging new developments, especially in the case of such a vital and irreplaceable fuel as natural gas. During the past five years of so-called peace, millions of our people have come to know and rely upon this clean, economical source of heating and its valuable by-products. Pipelines now span the continent, bringing our eastern coastal cities into the orbit of natural gas supply in a manner undreamed of a mere decade ago.

*For additional personal note, see "Pages with the Editors."

OCT. 12, 1950

Today it would be a trite understatement to say that natural gas has become a vital necessity for literally keeping the home fires burning. It has become more than that. The gas and oil industry, the gas utility company operators, the Federal and state regulatory authorities, and, most important of all, the Congress have been challenged to see that *nothing* stands in the way of promoting new and abundant sources of supply. Failure to meet that challenge would, under present conditions, mean not only a costly burden of fuel substitutes, but also a definite hindrance to an American military machine which must run in large part on petroleum products.

All this is by way of background and explanation for the simple fact

FIGHT TO FREE INDEPENDENT GAS PRODUCERS MUST GO ON

that the fight to free the independent gas producers must go on. We must not give up in the face of the President's veto of the bill which I introduced and which was passed by the 81st Congress. I respectfully submit that not only was the President's veto ill-advised, but further that the present situation dictates a positive duty upon those of us who know the true facts and the important issue involved in this situation to renew the struggle. To that end I pledge my own untiring efforts and I am glad to state here and now that the chances of a favorable outcome have never been brighter if we pursue our course unflinchingly and intelligently.

MUCH misinformation has been passed around about the so-called Kerr Bill. I am convinced that some of these false ideas and assumptions were responsible for the President's action. Much subterfuge and downright devious methods have been employed to bring the independent gas producers under the blighting restriction of Federal regulatory domination, which is totally unsuited to the very nature of the gas production industry and was never intended by Congress.

At the outset, we are faced with the false charge that the independent gas producers are seeking to escape or evade some form of lawful regulation. The true fact is that the Kerr Bill was an honest effort to clarify an exemption which Congress specifically asserted in the original Natural Gas Act—an intent which had been systematically ignored and partially obscured by the Federal Power Commission.

The Kerr Bill was in no way differ-

ent from the so-called Priest Bill which the 80th Congress considered along with the Rizley Bill, which actually passed the House. I quote here from a letter concurred in unanimously by the Federal Power Commission, dated July 10, 1947, and addressed to the House Interstate and Foreign Commerce Committee. This letter stated (italics supplied) :

"My dear Mr. Chairman : This is in response to your request of July 9th for an early comment by the commission regarding HR 4099, a bill introduced by Congressman Priest of Tennessee.

"The Federal Power Commission urges the enactment of this bill at this time to make it perfectly clear that independent producers and gatherers of natural gas are exempt from the provisions of the Natural Gas Act and the jurisdiction of this commission.

"The enactment of this bill would dispel the uncertainty regarding the status of such independent producers and gatherers which has been created following the recent decision of the Supreme Court in the Interstate Case. Such action by the Congress now should dispose of this important and noncontroversial matter.

"This procedure would enable the Congress to defer action on the many other aspects of natural gas regulation involved in the complexities, uncertainties, and ambiguities of HR 4051 (the Rizley Bill), to which we referred in detail in our statement of July 1st to you and the members of your committee. As you know, all these problems are being carefully analyzed by the commission, in coöperation with all interested parties, in the Natural Gas Investigation (Docket No. G-580). A

PUBLIC UTILITIES FORTNIGHTLY

full report on this investigation will be submitted to the Congress for its consideration within the next few months.

"I am authorized to state that the position of the commission in this matter is fully in accord with the legislative program of the President.

"Respectfully yours,

Federal Power Commission
By Nelson Lee Smith, chairman."

If words could a malady cure, these would have worked a miracle. They do not, however, stand alone. They were followed within a few weeks by other words which were even more pregnant with promise of security and which, had they been sustained by substance in equal portions with the form they created, would have made a foundation upon which security could have been built.

From Order No. 139, a solemn, official decree of the Federal Power Commission,¹ issued about two months after the writing of the letter which I have just quoted, I reproduce the following text:

"For the reasons stated below, it seems appropriate and desirable at this juncture for the commission to adopt and promulgate the rule contained herein, which is designed to relieve any existing uncertainty regarding the

¹ Four members of the commission approved the order. Commissioner Draper dissented.

commission's position that it will not seek to assert jurisdiction over the sale of natural gas to interstate pipelines by independent producers or gatherers.

"Following the release in March, 1947, of the staff report in Docket No. G-580 on this subject, entitled '§ 1(b) of the Natural Gas Act with Reference to Production and Gathering,' the commission consistently therewith on May 27, 1947, issued a notice of proposed rule making in this matter. At that time, since there were prevalent many expressions of uncertainty as to the commission's interpretation of § 1(b) of the act with reference to the status of independent producers and gatherers of natural gas, and as to its intentions with respect thereto, *it seemed evident that a formal administrative rule was necessary to affirm our belief that it was the intent of Congress to exempt such independent producers and gatherers when it enacted the Natural Gas Act in 1938.*

"During the first session of the 80th Congress, which adjourned on July 27, 1947, various bills regarding this matter, as well as other important proposals for amending the Natural Gas Act, were introduced and considered by the Congress. At the hearings on these bills before the Senate and House Committees on Interstate and Foreign Commerce, the commission likewise stated its view that independent operators who produce or gather natural



G "THE outbreak of the Korean war necessarily means many things to many people responsible for the protection of our national security. Here on the home front it means husbanding our natural resources and encouraging new developments, especially in the case of such a vital and irreplaceable fuel as natural gas."

FIGHT TO FREE INDEPENDENT GAS PRODUCERS MUST GO ON

gas and sell it at arm's length to natural gas companies subsequently transporting such natural gas in interstate commerce are exempt from the provisions of the Natural Gas Act.

"REFERENCE also was made at these hearings to the pending case before the Supreme Court of the United States in *Interstate Natural Gas Co., Inc. v. Federal Power Commission*.² The subsequent decision of the Court on June 10, 1947, addressed to the particular circumstances of that case which involved the operations of a natural gas company subject to the act, immediately became the basis for diverse interpretations and agitations by interested parties, as to its implications regarding the jurisdictional status under the act of independent producers and gatherers.

"In view of these circumstances the commission urged the immediate adoption of HR 4099, the specific and sole purpose of which was to make entirely clear the exemption of the independent production and gathering of natural gas from the provisions of the Natural Gas Act. This proposed amendment, however, was not enacted during the closing days of the session of the Congress which has just ended.

"This brief review of developments in this matter has been presented so that there may be no basis for misunderstanding or continuing expressions of fear and uncertainty regarding this matter which is noncontroversial. The commission gives its assurance to independent producers and gatherers of natural gas that they can sell at arm's length and deliver such gas to inter-

state pipelines and can enter into contracts for such sale without apprehension that in so doing they may become subject to assertions of jurisdiction by the commission under the Natural Gas Act.

"The rule herein has this specific purpose and is issued at this time because the Congress has not yet reaffirmed such exemption by amending the act. It is also our intention, in keeping with the position heretofore taken, to continue to recommend to the Congress that it take appropriate clarifying legislative action regarding this matter."

THREE followed the congressional passage and subsequent veto of the Kerr Bill, which I shall further explain later on. Once the President's veto of the Kerr Bill became an accomplished fact, the FPC quickly changed its tune. On August 17, 1950, it proceeded to rescind its own Order No. 139. In this action, the FPC majority clearly indicated that it now intends to throw open the entire independent production field for "special" investigation but, at the same time, leaving the actual assumption of control to future piecemeal procedure. Starting with the larger companies, each natural gas producer would thus become a special case, until one by one the legal as well as practical limits of FPC's new area of authority become consolidated. Phillips Petroleum Company was specifically mentioned as being the first probable case, with hearings scheduled to open October 9, 1950.

The passage and veto of the Kerr Bill were mentioned by the FPC majority in a policy statement issued with

² 331 US 682, 69 PUR NS 1, 91 L ed 1742.



Effect of Regulation

"It is well known to all that excessive or unnecessary regulation and restriction tend to create scarcity and higher prices. There has been a great increase in the demand for natural gas these last years; but the supply has increased twice as fast as the demand. Yet at this moment at least one-half of the reserves that have been recently discovered have not been made available for purchase by the interstate pipelines."

its rescinding order. The statement declared that it was not the intention of the commission to inaugurate a "general investigation" respecting existing rates charged by producers and gatherers. Although the rescission order was technically unanimous, Commissioners Smith and Wimberly, in a concurring opinion, dissented in principle, stating that they agreed to the majority action only because "the order (No. 139) does not accurately reflect the interpretation placed by the majority on the Natural Gas Act, and therefore the policy of the commission."

In this act, the FPC majority ignored the law as passed by Congress. They repudiated their own official order and their own code of rules. They now declare that they will investigate individuals without regard to uniform or equal treatment to others in the

same position. They now propose to regulate on the basis of their personal selection, one or more out of many, without any necessary regard for justice or special discrimination.

It is clear to me that Federal control of the oil and gas industry is the ultimate aim of the FPC. But I am amazed at the way the FPC has gone about regulation. This latest step apparently has grown out of the FPC case against the Phillips Petroleum Company. On July 6th, the Phillips Petroleum Company filed a motion seeking to avoid regulation as guaranteed by Order 139. In the face of this motion, the FPC promptly threw out its three-year-old order and wrote off its long-established policy.

This demonstrates they do not pay much attention to the language of the Natural Gas Act as passed by Congress

FIGHT TO FREE INDEPENDENT GAS PRODUCERS MUST GO ON

or to their own official orders and declarations. When the law gets in their way, they disregard it. When their own order stands in their way, they rescind it.

Obviously, the FPC plans to select its own field of jurisdiction so as to say which companies shall or shall not be subject to its control. Any time a court either claims the power to choose whom to regulate, or how to regulate, in the absence of legislative authority for both, its judicial sincerity is subject to question. There can be but one basis for regulation and that is under the terms of the law enacted for the purpose. There can be but one standard of the application of regulation and that is to all alike.

And why is it so important that the independent producers should remain free of Federal interference? Let us examine some of the points made in the President's veto message for the answer to this question. The President's veto message stated in part:

I believe that authority to regulate such sales is necessary in the public interest because of the inherent characteristics of the process of moving gas from the field to the consumer. Unlike purchasers of coal and oil, purchasers of natural gas cannot easily move from one producer to another in search of lower prices. . . . The pipeline companies, and in turn the consumers of natural gas, are bound to the producers, and gatherers in a given field by the physical location of their pipelines, which represent large investments of funds, and cannot readily be moved to other fields in search of a better price.

THAT represents one of the basic fallacies of the opponents of this bill. Before an interstate project be-

gins to take shape, the pipeline does not exist and the producer is free to sell his gas where he will. The pipeline cannot be built until the producer has bound himself for a term of many years, usually a minimum of twenty and often as many as fifty, to furnish his gas to a specific pipeline. Thus, the producer makes the existence of the pipeline possible but in doing so the producer shackles himself and his production to that pipeline for his market. It seems, however, that the performance of this service, without which the pipeline could not exist or operate, does not satisfy the opponents of the bill.

They want to place upon that producer the further destructive burden of supplying his gas until it is exhausted—not on the basis of the contract by which he made the pipeline possible—not on the basis of the value of his gas—not on the basis of what he could sell it to other markets had he not by contract bound it to the specific pipeline.

THOSE who opposed the bill want to compel that producer to sell his gas at a bare minimum price sufficient only to reimburse him for his necessary cost in producing it and putting it into the line.

I quote further from the veto message:

While there are a large number of producers and gatherers, a relatively small number of them own a substantial majority of the gas reserves. Furthermore, the demand for natural gas has been growing phenomenally in recent years, and its natural advantages as a fuel, coupled with its present price advantage, indicate that demand may soon be pressing hard upon total supplies.

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THE demand has increased phenomenally in recent years, but the dramatic fact is that *unregulated independent producers have been discovering and developing additional supplies at a far greater rate than that at which demand has increased.* Twenty years ago, when the annual consumption was three trillion cubic feet, the known reserve represented less than twenty-five years' supply. Today, the annual consumption has more than doubled, but we have in sight, and proved, a supply adequate for thirty to thirty-five years. Enactment of the bill was the only insurance policy for the supplies to continue to grow and expand.

The veto message further stated:

It is argued that regulation of sales of natural gas to pipe-line companies would discourage producers and gatherers from selling their gas in interstate commerce, and would discourage exploration and development of new wells. This claim rests primarily on the assumption that the Federal Power Commission would apply standards of regulation which did not take account of the peculiar circumstances of natural gas production—such as the cost of exploration and development, including the drilling of dry holes.

This paragraph demonstrates the complete lack of knowledge of the record of exploration for new gas fields by regulated companies as compared to independent operators.

All the regulated companies in the nation have drilled, on the average, less than 12 wildcat or exploratory wells per year for the past ten years. Independent operators have drilled approximately 8,000 such wells each year for the past four years. During the war years, in spite of scarce materials and equipment, the independents drilled an average of 5,000 exploratory wells per year.

Solely because of the wildcat or exploratory wells drilled by independent producers, the nation's known gas reserves have been tripled in the last twelve to fifteen years.

THE regulated companies have not drilled exploratory wells in the past and will not drill them in the future for two very simple but compelling reasons: First, the FPC basis of regulation provides neither incentive nor reward to a regulated company for finding new reserves. In fact, a regulated company is penalized for finding new reserves and is rewarded for buying them rather than finding them.

To illustrate: If a regulated company spent \$2,000,000 in exploration and found no new reserves, the FPC would be the sole judge of how much, if any, of the money so spent could be added to the rate base and recovered by the company, and how many years must be taken in which to recover it.



Q"THE opponents of the Kerr Bill have been the ones who have disregarded the interests of the consumers. The pitiful part of it is that those who brought about the veto did so in complete ignorance of the fact that while they were visiting tragedy upon the producer they were visiting calamity upon the consumer."

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If, however, this regulated company spent this \$2,000,000 in exploration and found \$50,000,000 worth of gas, it would not be one penny better off by reason of such discoveries than it would have been had no gas been found. The FPC would still determine what part of the cost, but not to exceed the total of the \$2,000,000, would be added to the company's rate base and how many years must be taken in which to recover it.

In either event, the company would be permitted to earn $6\frac{1}{2}$ per cent on the \$2,000,000 cost or on the unrecovered part thereof.

On the other hand, if the regulated company borrowed \$50,000,000 and bought that amount of new reserves, it would be permitted to earn $6\frac{1}{2}$ per cent over and above all interest charges, amortization costs, and all the expenses on the unrepaid portion of the \$50,000,000.

Thus, a regulated company is penalized by small or inadequate return on what it spends in exploring for new reserves whether it finds any or not. On the other hand, if it acquires new reserves by purchase at the highest prices permitted by FPC, it is rewarded.

THE President went on to express his "confidence" that the FPC would apply "standards properly suited to the special risks and circumstances of independent natural gas producers and gatherers." It is a fact of record, however, that FPC testimony before the Senate committee shows that the same standards of regulation will be applied to the independent producers as have always been applied to the regulated companies.

Many independent producers have called me and wired and written me asking where we now stand and where we are headed. Some have even said that the kind words of the veto message make them feel as good as if the bill had become a law. This reminds me of the patient who enjoyed the sugar-coated pill until the slug of strichnine hidden inside began to paralyze his insides.

It is true that those who would look only at the words might decide that the bill is dead but that all is well. The truth, however, is that the bill is not dead and all is not well.

The truth also is that the independent gas producers of this nation cannot let the principle of this bill die unless they are willing at the same time to see their great industry expire with it.

Those who would entomb the bill should make the grave large enough to bury the industry with it because the industry cannot survive under FPC regulation.

FURTHER evidence of lack of faith to be placed in the official statements of the FPC may be found in its brief in the Interstate Case. The state of Texas and the state of Oklahoma had filed briefs *amicus curiae* in the U. S. Supreme Court in which they set forth, first, the responsibility of the states with reference to regulation of production and gathering; second, the provisions of the Natural Gas Act itself; and, third, the growing fear that the purpose of the Federal Power Commission was to invade the sovereignty of the states, compel its jurisdiction upon the producers within the state, usurp the right of the state to



The Duty of Gas Producers

"...the independent gas producers of this nation cannot let the principle of this [Kerr] bill die unless they are willing at the same time to see their great industry expire with it. Those who would entomb the bill should make the grave large enough to bury the industry with it because the industry cannot survive under FPC regulation."

so regulate, and fix the price of natural resources in the ground within a state.

In reply the FPC attorneys said this :

The commission has never sought to extend its jurisdiction over the sales of natural gas made by independent producers and gatherers, but only over sales made by one otherwise a natural gas company or where affiliation between seller and purchaser is involved or where there is transportation in interstate commerce by the seller after completion of gathering prior to the wholesale sale. . . .

A review of the briefs submitted in behalf of the states of Oklahoma and Texas raises issues which we believe need not be considered by this Court. It appears to us that these states are more concerned about what they fear the commission might do than by what it has done.

As I read that language in contemplation of the record that has been made, I am reminded of the words of old Job when he said: "Behold that which I feared has come upon me."

AND then if I wanted to refer you to the most assuring words of all; if I wanted to refer you to that upon which any American has the right to look with assurance; if I wanted to quote for you the language which above all others besides that within the Constitution itself under which Americans are entitled to guide their course and express their rights and privileges, I would refer you to the *language of the Natural Gas Act itself*, wherein it is stated: "The provisions of this act shall apply to the transportation of natural gas in interstate commerce, to the sale in interstate commerce of natural gas for resale for ultimate public consumption for domestic, commercial, industrial, or any other use, and to natural gas companies engaged in such transportation or sale, but shall not apply to any other transportation or sale of natural gas or to the local distribution of natural gas or to the facilities used for such distribution or to the production or

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gathering of natural gas." (Italics supplied.)

One of the mysteries that I have contemplated and which is yet unsolved is how men of judgment, knowledge, and intellectual integrity can take the position that a law gives them the right to regulate the price of a product in the field to which the language of the law itself states *that it does not even apply*.

What a tragedy that those who have interpreted and have responsibility for the administration of that law have not informed themselves by physical visits to the areas where the situations described exist in order that they might in their minds realize what is meant by the "field of production" on the one hand and the "field of gathering" on the other. Then their consciousness would be overwhelmed by the realization of the clear mandate of the law, saying "Thou shall not enter here" when it states that the provisions of the act "*shall not apply to the production or the gathering of natural gas.*"

I BELIEVE that the gas industry is confronted with the most serious threat which any segment of American industry has ever faced. On the basis of the record of those charged with the responsibility of the operation and the administration of this act we cannot place credence in the words that are used, in the orders that are issued, but only in the record of the commission.

The FPC does not regulate on the basis of allowing the producer the amounts for his gas which the contract he made, under which he delivers it, calls for. Former Commissioner Olds

told the committee of Congress that those contracts are "mere scraps of paper except as the commission finds them to be in accordance with their rules and formulae of regulation."

Their basis of regulation is not with reference to what the product is worth. That has no more significance than if it did not exist. That regulation is not on the basis of what the producer might be able to sell that gas for if it is consumed within the state where it is produced. That regulation is on the basis of what his cost is in the actual drilling and operating and handling of the gas from his properties.

That kind of regulation would enable the FPC to come into Oklahoma or Texas or Louisiana or Arkansas or Ohio or West Virginia or Pennsylvania, or any other state, and compel the delivery by the citizens of those states of the natural resources with which the states are blessed, and of which the owners are possessed, for transportation to other areas of the nation without allowing either the one who produced it, or the state where it was produced, a single penny for its economic value.

AND now let us look at the situation from the standpoint and interest of the consumer. The opponents of the Kerr Bill have been the ones who have disregarded the interests of the consumers. The pitiful part of it is that those who brought about the veto did so in complete ignorance of the fact that while they were visiting tragedy upon the producer they were visiting calamity upon the consumer. What they seek to do would impoverish the producer without enriching the consumer. What they propose to do would

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result in equal violence to the welfare of the consumer to that which they would visit with reckless disregard upon the producer.

Not only was it an antimonopoly bill, but it was the best insurance policy for reasonable prices for natural gas to the millions of consumers now using it, and to the millions of consumers who still seek to have the opportunity to use it.

Samuel Johnson, the great Englishman, once said: "I don't know that man; therefore, I don't like him." Some people who knew the least about this bill jumped to the conclusion that they did not like it.

Claims were made that the passage of the bill would raise the price of gas to the consumer by hundreds of millions of dollars a year.

Nothing could be further from the truth. I call attention to the fact that the independent gas producer has never been regulated, yet he has made it possible for the consumers of natural gas to enjoy the cheapest, safest, cleanest, and most desirable fuel ever used.

I CALL attention to the fact that the price of natural gas to the consumer furnished by unregulated independent producers has gradually declined for the past twelve years. Every other commodity purchased by the

American consumer has, during that same period of time, increased nearly 70 per cent, and the cost of food during that time has increased 217 per cent.

The average housewife would be greatly surprised to know how little that independent producer really gets out of her gas bill. For every \$1 per thousand cubic feet which she pays on her bill, the producer in the Southwest gets less than 5 cents. Yes, less than a nickel out of each dollar. She knows that is a very small chunk out of her gas bill, but she also knows that it is a very important chunk. After all, if the producer cannot produce the gas and cannot sell it to the pipeline, the local gas company cannot deliver it to the housewife's home for her use at any price.

Much was said by opponents about the increase in the last few years in the average price paid to the independent producer. A chart prepared by the FPC shows that the average price paid the independent producer for gas contracted for in 1946 was approximately 5½ cents a thousand; the average price paid for gas contracted for in 1947 was about 6½ cents per thousand, and the average price paid for gas contracted for in 1948 and to the middle of 1949 was about 7.2 cents per thousand cubic feet.

With these increases, the over-all



G"I BELIEVE that the gas industry is confronted with the most serious threat which any segment of American industry has ever faced. On the basis of the record of those charged with the responsibility of the operation and the administration of this [Federal Power] act we cannot place credence in the words that are used, in the orders that are issued, but only in the record of the commission."

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average being paid today for all of the gas furnished by independent gas producers is still less than 6 cents per thousand. Yet the over-all price paid by the consumer today is 12 per cent less than it was ten years ago.

Now I want to tell the American housewife and all other American consumers, who it is that is responsible for the fact that the average price being paid today under new contracts is higher than it was three years ago.

Until the contest in the Interstate Case, which was decided early in 1947, the question of exemption of the independent producer from regulation was noncontroversial. It was only when the FPC threatened regulation that independent producers began to be afraid to make contracts to sell their gas to interstate pipelines in interstate commerce.

When that threat appeared and when that fear resulted, much known gas production thereby became unavailable for purchase by the interstate pipelines. Now that the veto has made the threat more nearly a reality less and less new contracts to sell gas have been signed. In my opinion still fewer will be signed. This will clamp a deep freeze on the business of selling gas in interstate commerce. This will mean that producers will not be free to sell more gas for present consumers nor any gas for future consumers.

It is well known to all that excessive or unnecessary regulation and restriction tend to create scarcity and higher prices.

There has been a great increase in the demand for natural gas these last years; but the supply has in-

creased twice as fast as the demand.

Yet at this moment at least one-half of the reserves that have been recently discovered have not been made available for purchase by the interstate pipelines. If threatened regulation has brought *some* scarcity and *some* increase in prices I ask what will *actual* regulation bring? The answer must be still greater scarcity and thus still higher prices.

If the principle of the Kerr Bill does not prevail, the result will not be more gas to the consumer at less cost. It can only be less gas to the consumer at higher cost.

Some were amazed when I made the statement that today the independent producers own 93 per cent of all of the known gas reserves in the nation. Yet these independent, unregulated gas producers have furnished and are furnishing ample gas wherever the facilities are available to deliver it, and they are doing so at half the cost to the consumer of any other available fuel.

WHERE would many of our great consuming centers be today if they had to depend upon regulated companies for their gas supplies? Where would this country be, as regards fuel, either in coal strike season or out of coal strike season, either without the gas from these independent, unregulated gas producers or if the country had to depend upon the regulated companies?

Will the supplying of gas change? The regulated companies have not added to their reserves in twenty-five years. They have steadily depleted them, not replaced them. They have steadily lost ground in the compara-

tive position of their ownership of reserves because they are regulated, because they have no incentive to find additional reserves. Who would look for reserves when, if they were found, those who found them would be compelled to sell them at cost plus 6½ per cent?

How fantastic were the opponents' claims about price increases? Some were so reckless as to talk about increases in terms of hundreds of millions of dollars a year. The fact is that the total amount paid to all the independent producers in the nation for all the gas they sell in interstate commerce up to and including 1948 was less than \$75,000,000 a year. That was gross.

The Kerr Bill would not have changed the price of any part of that gas. All the gas now going to consumers everywhere moves under contracts by which present prices are extended far into the future.

To regulate or not to regulate—ah—that is the question. Whether to suffer the evils of that abundance with which we are surrounded, or to flee to that scarcity we know not of. Whether to insure the free and expanding flow of this best of all fuels into millions of more homes by leaving it free as it has ever been, or to reach out that paralyzing hand to destroy the certainty of further growth and to sap the vitality of the present healthy service and supply.

“PERHAPS the outstanding peculiarity of modern man is his disposition, consciously and deliberately, to take risks about the future. If he ever lost that quality, human society would become static and lifeless. Now this disposition prevails even though he cannot predict, even though he has only the vaguest idea of the immediate consequences of his acts. This seems to me to raise a fundamental dilemma in any economic society. Even though we cannot predict, can we as practical men, behave with wisdom about the future? Can we reduce risk by taking thought?

“As far as economic affairs are concerned, prediction means the investment of capital. The planned economy and the free economy give two quite different answers about investment policy. The planned economy puts investment into the hands of a central body of men; the danger of this is, of course, massive and appalling mistakes of which there is already some evidence in Europe. The free economy distributes those risks; it leaves them to be taken by thousands of dispersed businessmen each relying upon his own assessment of the future of consumers' demand and of technique. Now we cannot prove that one system or the other is the better. We can watch individual cases. My own instinct would be to believe that state monopoly of investment is a gamble; that the prudent course is the backing of many horses both ways, which we get in the free economy. But that would be true only if we can be sure that businessmen will continue to take risks.”

—JOHN JEWKES,
Economist.



Operation Gas Changeover— Baltimore

The relative advantages, for a utility supplying manufactured gas, of a one-step conversion to natural gas are weighed by an operating company executive whose firm has recently completed such conversion. Referring to the task as "Operation Changeover" the author recounts the steps by drawing frequent military parallels in order to present a clear picture of recent practical conversion experience. Considerable attention is given the customer's position and the need for good public relations and customer education.

By JOHN H. WOLFE*

VICE PRESIDENT, CONSOLIDATED GAS ELECTRIC LIGHT &
POWER COMPANY OF BALTIMORE

ON May 1, 1950, the Consolidated Gas Electric Light & Power Company of Baltimore began the largest job of its type ever undertaken in this country—the conversion in one step from manufactured to straight natural gas of more than 612,000 appliances used in 355,000 homes, stores, business establishments, and industries. Many problems were encountered and headaches experienced, but changeover was completed on schedule. If our company's experience can be any criterion, a company contemplating a changeover should stress the following:

1. Plan thoroughly all phases of the operation.

*For additional personal note, see "Pages with the Editors."

2. Emphasize safety in all conversion operations.

3. Employ forceful publicity and effective public relations work to gain maximum customer coöperation.

For many years our company has been proud of its record as a distributor of manufactured gas. We stress "good public service" at reasonable rates and for a long time we were able to produce manufactured gas at a cost which heating unit for heating unit was less than the cost at which natural gas could have been obtained for Baltimore. The ingenuity and success of our gas manufacturing department in offsetting one increase after another in the cost of labor and gas-making fuels by devising new operational efficiencies and economies at our plant

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continued for a number of years. Following the outbreak of World War II, however, such large increases occurred in the costs of coke, purchased coke-oven gas, and gas-making oil used in making manufactured gas, that the company's postwar planning committee decided that the time was ripe to vigorously study the economics of changing over to the use of natural gas.

COMPANY representatives visited other cities, notably Chicago, Detroit, Washington, and St. Louis to study at firsthand what changeover meant in terms of effort, expense, and results. Our company also engaged Ford, Bacon & Davis, Inc., consulting engineers, to survey the general situation with respect to a supply of natural gas and to study its utilization in our local market. A gas advisory committee, composed of staff personnel of our company, was formed to study all phases of the subject. This committee, together with the consultant, submitted a series of reports covering the availability of natural gas, the economics of the distribution of straight natural gas, the distribution of mixed manufactured and natural gas of various heating values, and the use of limited quantities of natural gas for enrichment.

These reports culminated in the making of a requirements contract with the Columbia Gas System, Inc.

Application was made to the Federal Power Commission, and on July 27, 1949, the Atlantic Seaboard Corporation, a wholly owned subsidiary of the Columbia Gas System, Inc., was authorized to construct facilities to furnish our company with enough nat-

ural gas to supply the entire area which we serve.

The then executive vice president of our company appeared before the public service commission of Maryland and outlined our plans for distributing natural gas. He explained that "considerations of economy and the benefits which will accrue to the gas-consuming public" decided the company to seek a natural gas supply. He further testified that "between 1939 and 1948 the drastic increases in the cost of oil, coke, coal, coke-oven gas, and other materials and the increases in the cost of labor practically tripled the cost of manufacturing artificial gas." A powerful argument for the use of natural gas was that it enabled us to make a rate reduction to save gas consumers \$7,500,000 in the first full year of natural gas distribution, such reductions to be made effective with meter readings taken on the conversion day for each customer. Also, since the BTU content of natural gas would be over two times that of our manufactured gas, a strong incentive existed in that our distribution and storage facilities could handle twice the amount of gas, thermally speaking, without immediate and costly expansion of such facilities.

EXPLAINING that the company planned to convert its gas-manufacturing facilities to the manufacture of high BTU oil gas, the executive vice president stated:

We believe that it would be recklessly imprudent to scrap our manufacturing plant and rely on natural gas alone for the gas fuel needs of this large and populous area with its many homes, businesses, and industries dependent

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on an uninterrupted gas supply. Especially will this be so with thousands of homes dependent on gas for heat in the dead of winter. Experience has indicated that an emergency stand-by source of supply may prove to be invaluable in the event of an interruption in the transmission company's service. There is a second and equally important reason. . . . Under the terms of our contract with Atlantic Seaboard Corporation . . . the price of gas . . . is to be made up of two parts, a *demand charge* . . . and a commodity charge. The commodity charge is a straight charge which increases and decreases in total amount as our purchases of gas increase and decrease seasonally. The demand charge, on the contrary, when once it is established, can decrease by only a small amount and does not decrease with decreased purchases. . . . During the cold winter months, we will expect peak days of exceptionally high demand. If we take our full requirements for these exceptional days from the Seaboard Company, then a billing demand will be established which will be out of proportion to the normal demands of our system. . . . We, therefore, propose to use our manufacturing plant to peak shave on these exceptional days. By thus improving our load factor and carrying the peaks with our own equipment, we will substantially reduce the demand charge component of the cost and thereby keep the overall cost per thousand cubic feet to a minimum.

SOME of the equipment at our Spring Gardens manufacturing plant was used as a "pilot plant" by the American Gas Association's gas production research committee when in the fall of

1947 a full-scale test machine was fashioned of two existing carbureted water gas sets for the development of the Hall High BTU Oil Gas Process. Results of test runs made in the summer of 1948 were reported at the American Gas Association convention in the autumn of 1948 and were subsequently published in "Research Bulletin Project HB-1."

We now have two sets which are operated on the Hall process. These will be used first "on the line" to manufacture high BTU oil gas to supplement natural gas. Peak loads above this will require the use of 21 other sets converted to the parallel generator process which will also produce high BTU oil gas.

Although the conversion to natural gas will reduce the number of men required at the plants, these men are being absorbed in other departments of the company. Transfers have been effected with the full cooperation of department heads and of the men involved, the latter having been given assurance early by the management that the introduction of natural gas would not jeopardize their employment.

ONE of the studies made early by our gas advisory committee was to consider a "two-step" conversion using an intermediate mixed gas—part natural, part manufactured. This method had the advantage of a mini-



Q"THOROUGH preparation for the changeover to natural gas, careful execution of the actual operation, and forceful publicity are all a tremendous help but will not entirely eliminate all of the difficulties and special problems which are likely to be encountered."

mum cost for sectionalizing valves, since it required dividing the system into only twenty sections separated by more or less natural lines of division—ravines, rivers, harbor, railroads (a minimum number of gas mains cross these). With such a "two-step" changeover each section could have been completed in about a week for each step. The obvious disadvantage was that it inconvenienced the customer twice—once to adjust for the intermediate mixed gas, and a second time to complete to straight natural gas. Our company's management decided that such a changeover meant too much in the way of inconvenience to customers. It was thought that it might well create an unfavorable reaction at a time when the company was striving to increase the use of its gas service. Therefore, the management insisted that conversion should be substantially completed in each customer's home in one operation and that a short time be set for the completion of each section, in our case a maximum of two days. Since management had decided on a maximum of two days per section, exact preparation was vital. How best to balance the number of meters against the number of available adjusters to avoid excessive premium overtime of the adjusting force? How to install a minimum number of sectionalizing valves and still do the job? The smallest sectionalizing valve cost \$300 to install—average cost was \$425 (based on 1949 prices and wage cost). In all, we installed 412, which with existing valves divided the area served into 68 sections. In addition, the installation of nine permanent pressure regulator stations and five temporary ones was necessary.

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Exhaustive technical studies of the gas supply required to feed each section were made to assure an adequate supply of both types of gas. Of utmost importance in a sectionalizing plan, and which can at times be insured only by a dress rehearsal, is the necessity of avoiding a critical reduction of gas supply for adjoining unconverted areas.

"OPERATION Changeover" (as we have popularly termed the conversion plan) resembled a military maneuver of encirclement and advance—a pincers movement. In general, the plan was to introduce natural gas from the west, circling toward the north and then toward the south to encompass the western areas of our system; then encircle from the southeast and later proceeding from the northeast and thus force into retreat the manufactured gas which was being distributed outwards from our gas plant located in the central part of our system near the harbor. This called for skillful strategy and tactics by our gas division.

To accomplish our mission, we established three natural gas "beachheads"—one on the west at Granite, one in the northwest at Owings Mills, and one on the north at Beaver Dam. Regulator stations placed strategically along the lines allowed proper feeding of the converted sections and kept pressures constant.

Again militarywise, all operational activities connected with natural gas, technical or otherwise, were under the direction of a coördinator (the superintendent of gas distribution).

Maps establishing the general conversion areas were originally based

OPERATION GAS CHANGEOVER—BALTIMORE



The Rôle of Odorizing during Changeover

"In pointing out pitfalls to others contemplating changeover, we would stress the need for rigid control of odorization. Odorizing is done primarily to warn the customer of dangerous leaks. Too little odorant will not be effective; too much creates a pungent odor offensive to sensitive nostrils and causes the reporting of tiny seepages as serious leaks, which reports are costly to follow up and a nuisance to everyone."

substantially on natural lines of division. To refine these into the final 68 smaller, workable (maximum two-day) sections, we had to keep in mind the orderly introduction of natural gas from the three "beachheads," the number of meters practicable for conversion per section, and the avoidance of time-wasting skips from place to place by the conversion crews.

It was first necessary to determine the approximate number of meters in each meter-reading district so as to obtain an estimated count of meters for the larger conversion areas. After this preliminary count was reasonably complete, it was then found necessary to subdivide the larger areas into smaller conversion sections which could be completely converted in not more than two days by the appliance-adjusting crews. A large amount of

administrative work was necessary in order to reconcile customers' mailing addresses with specific gas service locations. A field check was made of the actual source of supply on all recorded gas services within seventy-five feet of each sectionalizing valve so as to be absolutely certain of these borderline cases.

Next our customers accounting department ran off on their addressograph machines a basic conversion order for each connected gas meter. After this was done a large force of clerks stamped the conversion section number on the face of each basic conversion order and subsequently filed these by section number in geographical order. Not until then was it possible to obtain a final accurate meter count by sections. After this final meter count was obtained, it became apparent that further subdivision of some sec-

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tions was necessary. Finally the basic orders were ready for issuing to the conversion contractor.

Early in our plans the decision was reached to employ a contractor to make the conversion of our customers' appliances. Conversions & Surveys, Inc., of New York, a Stone & Webster subsidiary, came to Baltimore with two strong recommendations:

1. An organization in being.
2. A long and successful record of experience.

THEY brought about 425 men to Baltimore, including supervisory and administrative personnel, crew bosses, and technical conversion specialists in various fields. Initially they hired about 275 new men locally, and stepped up this number by successive hiring until the total force was stabilized after six weeks at about 1,150. To orient the "old" conversion men and train the new ones, we set up a demonstration school at a point where both manufactured and natural gas supplies were available. Fourteen separate classroom booths were equipped mostly with old ranges, automatic water heaters, side-arm water heaters, and gas refrigerators typical of those in use in our area. House-heating, commercial, and industrial equipment was ranged along the walls and around a central hall fitted out as a lecture and demonstration room. Prior to opening the school to the conversion forces, every one of our gas fitters received sixteen hours in conversion instruction. School was in session for new conversion men for six weeks, with classes sometimes in two shifts. Each new man learned the rudiments, his conversion three R's, in fifty-five hours

of training spread over two weeks of six days each. New employees were later trained in the field by experienced men. In addition, the coördinator gave nine demonstrated lectures to employees in the customer relations, home service, merchandise, and other interested departments, and also to those who would be connected with the conversion program to give them an indoctrination in the requirements of and methods for conversion.

FOR one year prior to conversion "cellosolve," an excellent gum solvent, was used on portions of the high-pressure (100 pound) systems to keep any gums deposited from manufactured gas soft. Two months before conversion began, all the principal distribution mains—low, intermediate, and high-pressure—were conditioned by oil spraying to reduce absorption of the odorant by rust on the inner surfaces. In our case, conditioning of dry, odorless natural gas required humidifying, oil fogging, and odorizing. We odorized at the three gate stations. Automatic oil fogging of the gas took place at the two high-pressure gate stations and at the regulator stations spaced along the tie distribution pipelines. Where the latter discharged into the low-pressure system, the gas was also humidified automatically. At Spring Gardens, terminus of the 26-inch high-pressure main from Granite, the gas will be oil fogged, humidified, and reodorized. The oil fog will coat the interior of the mains and services with a desirable protective film. Oil fogging and humidifying have been adopted in an endeavor to prevent the onset of "dust" conditions experienced elsewhere caused by drying out of the

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dust and rust which have accumulated and which are whirled along with the gas stream and cause serious trouble in customers' appliances, particularly pilots. Moisture is also most necessary to prevent drying out the jute in the pipe joints.

In pointing out pitfalls to others contemplating changeover, we would stress the need for rigid control of odorization. Odorizing is done primarily to warn the customer of dangerous leaks. Too little odorant will not be effective; too much creates a pungent odor offensive to sensitive nostrils and causes the reporting of tiny seepages as serious leaks, which reports are costly to follow up and a nuisance to everyone. Minute leaks, which may have been present for years, will, however, show up simply as a result of the change in odor from the old one which is known to the new one with which customers are unfamiliar.

ALL changeover plans were evolved with safety as the main consideration. Chiefly for this reason the May to September period was chosen, since during that time natural ventilation would be the best as windows would be open and also the use of gas appliances would be at a minimum. So firm was this determination that the date for conversion was not advanced, even though natural gas became available three and a half months earlier.

This stress on safety has paid ample dividends by the complete avoidance of serious accidents throughout the entire period. Again by using the May to September period, the conversion contractor was able to set up a routine schedule under which house-heating conversion crews were able to carry on their work at a uniform rate and were not pressed to keep up with the other work in the sections. A late cold spring caused some improvising, but no customer was seriously inconvenienced.

Not only did we insist on safety but also on accuracy, promptness, and courtesy. The gas division operated a task force of fifteen inspectors who, the day after the conversion of each section, reviewed in the field the work of the various conversion crews. Approximately 8 per cent of the work was so spot checked.

Forceful publicity featuring full and complete information on what we planned to do and how and when we would go about doing it was employed in order to gain the maximum customer coöperation.

The major objectives of our public relations program, and the publicity used to implement it, were:

1. To make our customers "natural gas conscious" in order to—
 - (a) Minimize accidents during the conversion period, and
 - (b) Increase the probability of gaining admittance to the premises on conversion day.
2. To acquaint customers with the



G"All changeover plans were evolved with safety as the main consideration. Chiefly for this reason the May to September period was chosen, since during that time natural ventilation would be the best as windows would be open and also the use of gas appliances would be at a minimum."

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difference in the appearance of properly adjusted manufactured and natural gas flames, in order to lessen the number of postconversion appliance service requests.

3. To give the public all necessary information on changeover procedures and the benefits which they would gain through the use of natural gas.

INFORMATION on the proper and safe use of appliances was important from a safety standpoint. Publicity, coupled with conversion during the summer months, is believed to have been largely responsible for the absence of any serious accidents and for the unexpectedly small number of claims for personal injury or property damage. There were approximately 2,000 claims, of which 13 per cent were closed without payment; 25 per cent were settled by having our forces make minor repairs; 31 per cent were adjusted by making cash payments averaging about \$10; and the remaining 31 per cent were pending at the time this article was written, with indication that most of them will be closed without payment. From a public relations standpoint, the absence of serious accidents was most important.

The publicity campaign contributed measurably, in our opinion, to the small number of instances in which a gas service had to be cut off from the outside because the conversion men could not get in. On the basis of experience in other cities, we had expected to have about one-half per cent "dig ups." For our system this would have involved about 1,500 pick-and-shovel jobs at a cost of from \$50 to \$75 each. By the end of conversion it had been necessary to dig up and cut off only 104 services or .03 per cent of the total number of customers. Cus-

tomers really went out of their way to arrange for the conversion men to get in and our employees in the field were zealous in their efforts to gain legal entry where at first the way seemed closed.

On the initial canvass made during the first few hours after natural gas had been admitted to a section, a total of only 7,352 premises out of the 355,000 could not be entered or about 2.1 per cent. Subsequent contact with the customer was established in 3,458 of these instances, 2,411 were ascertained to be inactive accounts; in 1,317 instances meters were accessible and were turned off, 44 existing service valves were closed (the vast majority of our services are not equipped with outside valves or curb cocks), 18 inside branch services were cut, and, as mentioned before, 104 services had to be dug up. On most of these, cocks were installed which were closed off until the customers' appliances were available for conversion.

A STEADY flow of news articles, feature stories, and editorials in the local press kept the story of natural gas before the public during the latter half of 1949.

On August 1, 1949, a press conference was held, instead of relying only on the usual "release," at which city and county newspaper editors from gas service areas were in attendance by invitation to acquaint them with what we hoped to do. Newspapers responded by coöperating splendidly.

Columbia Gas System's technicolor film, "The Eternal Flame," was obtained and made available for showings to employees, schools, churches, lodges, service clubs, and other organ-

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Publicity Timing during Changeover

"An exact schedule for timing the appearance of natural gas publicity ads was worked out for metropolitan, neighborhood, special interest, and county papers keyed to the conversion dates in the respective areas. Just prior to the time each section was converted, these papers carried maps and instructions of what the customer was to do just before conversion."

izations. The first showings, with attendant talks by a member of a special speakers' bureau of company employees, were primarily to show the source and the dependability of our natural gas supply. As "C-Day" approached, emphasis was placed on what to expect during conversion, how to use appliances, and related information.

The film was displayed at 175 showings. Speakers carried maps showing how the city was divided into conversion sections, ordinary range top burners, a card containing a spud drilled for natural and one for manufactured gas, a burner cock assembly, and a kit equipped with two burners, one adjusted for manufactured and one for natural gas, together with small cylinders of manufactured gas and methane. With this kit the lecturer gave a practical demonstration of the characteristics of the two gases and dramatically pointed out the need for

turning natural gas on only part way on top range burners set for manufactured gas until such time as the burner was converted. The demonstration proved very effective. Question periods afterwards indicated an unusual and great interest by all audiences.

IN mid-October, 1949, letters were sent to appliance manufacturers notifying them of the future changeover to natural gas and requesting that they send to our gas laboratory natural gas burners from the appliances which they made in order that we might determine what needed to be done so that these appliances could be used with manufactured gas in the interim. A few days later we sent to all local dealers and distributors of gas appliances letters (enclosing the one above) requesting that, on all future sales, they provide the correct type of burner for use with natural gas.

In October of 1949, Columbia Gas

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System officials sponsored a two-day inspection trip, attended by five executives of the company and reporters from two Baltimore newspapers, to show the facilities which would be used in serving our company. The *Baltimore News-Post* and *Sunday American* ran a series of feature articles, interestingly outlining the natural gas story. The *Baltimore Sun* featured the "Pipeline in the Sky" as a full-page spread on the front of the "feature section" of the *Baltimore Sunday Sun*. Approval by the Federal Power Commission and rate reduction statements rated headlines.

Full and active customer coöperation had to be invoked; nothing less would have ensured smooth progress of the conversion teams. The big guns of publicity were brought to bear—the first salvo on January 19, 1950, being a full-page newspaper advertisement outlining lower rates for natural gas, effective from date appliances were converted.

A smaller ad and individual letters addressed to all nondomestic gas customers had announced two weeks previously the changeover date and notification of a preliminary equipment survey.

PUBLICITY was increased in volume and intensity as "C-Day" approached, using the media of newspapers, radio, television, and direct communications with customers. We are deeply indebted to the metropolitan and neighborhood press for their comprehensive coverage of the program, especially to the *Baltimore Sun* for its publication, as a public service, of small box notices displaying the section currently being converted and a few lines

explaining proper use of appliances during changeover.

An exact schedule for timing the appearance of natural gas publicity ads was worked out for metropolitan, neighborhood, special interest, and county papers keyed to the conversion dates in the respective areas. Just prior to the time each section was converted, these papers carried maps and instructions of what the customer was to do just before conversion. Beginning March 1, 1950, weekly advertisements promoting the use of natural gas for house heating appeared. The switch to gas of a large industrial concern previously using another fuel was announced in a full-page ad. Two weeks before the conversion crews moved into action, a full-page advertisement was inserted picturing a map of our gas territory divided into nine areas to facilitate publicity. This also showed approximate dates of changeover for each area, what to do during changeover, importance of making arrangements for conversion man to get in, regretting inconvenience to customers, and length of time required for conversion.

"Natural Gas," a multicolored booklet of twelve pages with indexed cover, was distributed, along with a section map and explanatory letter, to employees on March 1, 1950, and customers on April 1, 1950. This presented the story of the change to the new gas and outlined what the introduction of this new fuel meant to our customers. The booklet described in some detail the source of natural gas, its characteristics, the cost to customers, our stand-by facilities, including our manufacturing plant, and the mechanism of appliance conversion.

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At 4:30 PM on May 1, 1950, the first day of conversion, Baltimore's Mayor D'Alesandro turned a valve admitting natural gas into our system in a ceremony attended by top officials of the company and of the Columbia Gas System and its subsidiaries, leading citizens, and public officials. Motion pictures of His Honor were taken. At 7 o'clock that evening, the mayor and 200 high-ranking state and city officials, industrialists, bankers, businessmen, and civic leaders attending a natural gas "inaugural" were shown the completed film.

May 3rd, two days after actual conversion began, the film "The Eternal Flame" was presented on TV, as it was again on May 28th. Beginning May 4th, daily radio spot announcements were made urging customers to be home the day the conversion men arrived in their section. We sent after house keys when they were made available and arranged to shut off meters where requested, and where it was impractical to secure keys, making time appointments when possible.

Seven days before each section was entered, a boldly printed, black and red on white folder headed "Important Notice about Natural Gas. Please Read These Instructions Carefully" was mailed to each customer telling in simple language and with a sketch how and what to do on conversion day. This notice ended with a request to call our service board if for any reason the customer would not be home, so that other arrangements could be made. This circular we considered vitally important. In one instance where delivery of this folder was made ten days (three days too early) before the incidence of natural gas, "Can't Get ins"

jumped appreciably. The time interval was too long and people apparently had forgotten and had gone away without considering the nearness of "C-Day."

Five days before entering an area (made up of several sections) a full-page advertisement was published with a map of the area to be converted and a schedule of dates on which conversion was to begin in each of the numbered sections in that area. This ad also told what to do during changeover, how a properly adjusted natural gas flame looks (sketch), and the importance of having premises open.

The day before the conversion men entered a section, a handbill of instructions was left on each customer's door-knob. This notice employed the same color scheme used on the "7-day notice" and covered substantially the same data.

Thorough preparation for the changeover to natural gas, careful execution of the actual operation, and forceful publicity are all a tremendous help but will not entirely eliminate all of the difficulties and special problems which are likely to be encountered.

For example, gas service departments should be prepared for an avalanche of questions as well as requests for appliance service; our telephone calls were five times the previous "normal" and occasionally were greater. Calls reporting "leaks," resulting largely from the unaccustomed odor, were the most numerous; complaints on the slower lighting of burners from pilots were next in order.

To receive these requests and others pertaining to conversion, the customers' service telephone board added

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sixteen customer representatives to its staff of sixty-seven, increased the number of telephone positions from 44 to 52, its direct phone lines from 36 to 44, and PBX phone lines through the main switchboard to the board from 9 to 11.

OUR customers' service telephone board is manned twenty-four hours a day, seven days a week, with man power on shift schedules as determined by the time of the day and anticipated needs. From an average of about 400 a day, incoming gas service calls soared to an average of about 2,000, with one roaring day of about 4,000. Calls on Saturdays and Sundays were, however, lower. We had previously estimated that we would receive 12,824 inquiries and service calls per week during conversion. Between 85 per cent and 90 per cent of this number actually were called in and the ma-

jority of them were passed on as orders to the gas service department. Telephone representatives were all thoroughly indoctrinated in the whys and wherefores of natural gas and could answer most requests for information. Those inquiries requiring longer investigation were handed to a "fix-it" group of from four to seven men whose exclusive duties were the expediting of such matters.

It would not be frank to state that "operation changeover" was trouble free—it was not. Such a tremendous undertaking could not be carried on without some rough spots. However, when we review the results, we know that all the long months of careful planning, the steady flow of publicity, the careful mobilization and coördination of effort, had effected an end result from which we all can derive a feeling of accomplishment in a big job well done.

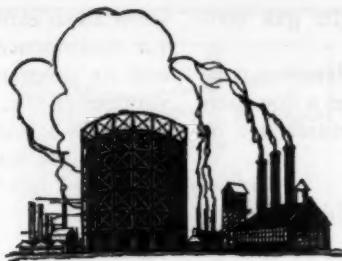
Natural Gas from the Gulf

"A CONTRACT for the construction of a gas-carrying pipeline to a field in the Gulf 10 miles off Vermillion parish [Louisiana] is a concrete move toward utilizing the vast stores of the tidelands gas. It calls attention once again to the exceptional industrial opportunities in this area resulting from the reserves of gas available here both for fuel and as a manufacturing ingredient.

"The pipeline off Vermillion is only one of several projected undertakings of its kind. Some half-dozen gas fields have been tapped under the Gulf waters and closed in temporarily because of the lack of transportation means. The drilling results at the Main Pass field just east of the Mississippi river mouth have shown the presence of large reserves in that section.

"Whether or not the Federal government succeeds in seizing the offshore bottoms, the gas will be available for use in this area cheaper than it can be hauled away to other parts of the country."

—EDITORIAL STATEMENT,
The (New Orleans) Times-Picayune.



What's the Gas Industry's Biggest Problem?

*A symposium of views by leading executives of operating utility companies throughout the United States. They were asked to give their individual opinions on the most pressing problem facing the industry during the coming year. Certain points of agreement, as well as partial variety among these viewpoints, give us a significant insight to the questions which weigh most heavily today on the minds of the industry's key managerial leaders.**

Statement by Clifford E. Paige

PRESIDENT, BROOKLYN UNION
GAS COMPANY

FAITH, don't we all need it? Faith in ourselves, faith in each other. Faith in the future. Faith in our business. It isn't enough for you and me to have it. We must teach it. We must impress investors with our soundness and our future, we must teach our users to have faith in our service, we must show our associates belief in the fairness of management.

None of us has attained supremacy. All of us must, with humility and yet with confidence, look forward and up.

All things are possible, but only with work. All work must have faith

as incentive. All achievement must be regarded as but one more step in reaching the goal.

Speaking generally, the gas business needs about everything. This is not unhealthy, especially when the realization of the need sets up at once the will to do something. For many years the people in the gas business have seen needs arise and immediately have done something. To their credit, they haven't been smug in their achievements, they haven't had time.

Needs vary in the business. Natural gas, mixed gas, and manufactured gas have much in common by way of needs and problems, but each has many peculiar to itself. Conditions vary with localities and with corporate differences. Combination gas and electric companies operate often quite

*Presented according to geographical location by regional areas from East to West.

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differently from straight gas companies.

Not always in a combination company does the gas end get a due share of attention. Opportunities are so often neglected.

CONDITIONS under which different companies operate vary greatly. Management opinion is often quite different even with those companies having somewhat similar conditions.

For example, some companies believe that they should merchandise their appliances. Others believe they should not. It is a question on which reasonable and unquestionably competent managements may differ.

We have the same thing in regulatory bodies. State commissions differ between themselves as to what constitutes proper regulation. This variance in viewpoint suggests sometimes that regulation is political rather more than economic in its operation. And as if these principles and philosophies were not enough, Federal agencies assert themselves more and more in assuming and, in fact, demanding rights to regulate whether or not their views are in consonance with state laws now controlling regulatory functions.

From a competitive standpoint, all utilities have more or less the same situation. The concept of a gas company as a monopoly is heard no longer. Its prosperity, if not its survival, depends on its ability to meet competition from any source; to earn its share, not of tolerance, but of good will; to command the respect of investors, without which dry rot sets in, which is devastating in its effects.

In years past, an investor wanted to

know about earnings, and the prospect for continuance; about management and its program for bringing along younger people, in due course, to succeed to administrative responsibility; and, a little later perhaps, what the company might be doing in the way of research.

THESE were fundamentals; they still are. Now we have highly trained experts to analyze our facts and our trends. We have in most cases developed people to deal with so-called public relations — directly with people, customers, employees, and investment representatives.

We have proved over and over again that truth is our best ally. Our business cannot be sold on romance, or fantastic claims for the future.

We have learned the meaning of faith, and have accepted the responsibility for fair dealing and simple truth in advertising.

To avoid misunderstanding and to foster unity, we have developed regional associations and over all the American Gas Association. These organizations are not lobbying outfits in any sense of the word. They merely provide a common ground where people engaged in our business may meet and discuss our business to the end that the industry may prosper. The achievements of such effort are astonishing and have contributed enormously to the high regard in which the gas industry is held—by its workers, investors, and customers.

Many companies in this country have been in operation for a hundred years, some a great deal longer. There have been transitions, there may be more, but the gas business with each

WHAT'S THE GAS INDUSTRY'S BIGGEST PROBLEM?



The Gas Industry's Number One Problem

THE primary problem facing the gas industry—common to the entire public utility field—is the expansion of facilities to increase service to the public in the face of today's high costs without unduly increasing the rates for service. The advent of natural gas has pointed the way toward solutions to this problem. Natural gas can be distributed directly, mixed with any available reasonably priced base load gas, or used as a raw material in the place of oil and coke to make manufactured gas which is interchangeable with coke-oven or carbureted water gas."

—W. E. LONG,
President, United Gas Improvement
Company.

change has come up stronger than ever.

If you believe what I say, you will agree that our future, as seen from here, is indeed bright.

I hope we may continue, as always, "to keep the faith."

Statement by George H. Blake
PRESIDENT, PUBLIC SERVICE ELECTRIC
& GAS COMPANY

BRIEFLY, it seems to me that the greatest problem facing the gas industry today is to devise ways and means of increasing earnings sufficiently to attract new capital and hold the investor's interest. This encom-

passes continued research to effect a lowering of operating costs, load studies to aid in the establishment of a balanced program of sales promotion, and rate structures so designed that they will not only be compensatory but will not price us out of the competitive market.

Statement by H. C. Forbes
EXECUTIVE VICE PRESIDENT, CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.

THE straight manufactured gas business is rapidly becoming the vanishing American of the public utility industry. Almost anywhere one

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turns a change from manufactured to mixed or straight natural gas is either in progress or in prospect.

There is every reason to believe that the changing aspect of the industry means a new wave of prosperity for it during the immediate future. Nevertheless, this is a time for the exercise of foresight and prudence upon the part of both utility managements and regulatory bodies or the newly found prosperity may all too soon become as dust and ashes. The change from manufactured to mixed or straight natural gas clearly will be accompanied by a substantial decrease in costs and so, of course, managements and regulatory bodies will be confronted with the question of what to do about rates.

LET us assume for the moment that as a result of the decrease in costs rates to consumers are drastically reduced. The consequence will almost certainly be a very large growth in the use of gas for space heating. This type of business has a notoriously poor load factor and its rapid expansion must soon lead to demands for additional natural gas during the peak send-out season, or alternately it will require the installation of peak shaving facilities. In either case, on account of the poor load factor of the new business, the utility company's costs will begin to go up, and the longer the process is continued the more they may be expected to increase. Let us bear in mind also that there is no assurance that an adequate supply of natural gas will be available for a period in excess of something like thirty years. Certainly it would be im-

prudent, to say the least, to neglect the possibility that the supply may gradually fail at about that time, and, if such proves to be the case, the upward trend of costs probably would then become precipitous.

ALL of this suggests that caution ought to be used in the adjustment of rates to consumers and that some provision should be made from the good earnings to be expected in the immediate future against the lean years that may all too soon be with us again. How can this be done? It would seem that the sensible thing would be to allow an accelerated rate of depreciation accruals so that the utility companies have an opportunity to recover a large part of their investment in gas plant while good earnings permit it to be done without undue hardship to consumers or stockholders. Such a course would be most helpful in avoiding future drastic increases in rates that would be both burdensome to consumers and damaging to the welfare of the industry.

The implementation of such a program may require the abandonment of depreciation accounting practices that certain regulatory bodies have treated with a reverence usually reserved for the scriptures, but it will be unfortunate indeed if a rigid insistence upon inflexible methods results in a failure to deal with the situation in a practical manner.

Statement by E. H. Eacker
PRESIDENT, BOSTON CONSOLIDATED
GAS COMPANY

THERE are many problems facing the gas industry in the next twelve

WHAT'S THE GAS INDUSTRY'S BIGGEST PROBLEM?

months. Outstanding amongst these is the ever-present need for new and improved methods of producing, distributing, and utilizing the product we sell in order that our services will be not only competitive but superior as well.

I believe a corollary of this fact is the need not only for a continuation of the support behind the Institute of Gas Technology and the PAR Plan but also a broadening of this support so that it encompasses all companies and segments of the gas industry to the end that added impetus will be given to both.

The present uncertain world situation, bringing with it the possibilities of further increases in the costs of the materials which we require and the possibilities of shortages of these materials, gives us all the more incentive to find less costly processes and less costly materials for production and distribution and higher economic efficiency. Are not these things really demanded whether we supply straight natural gas, mixed gas, or manufactured gas? More and more the problems in these different areas are becoming common problems.

THE gas industry, in its efforts to better fulfill its obligations, established the Institute of Gas Technology and set up the PAR Plan. It can be proud of both. We cannot expect such programs to pay dividends overnight, but already dividends are evident in the short time that has elapsed since the foundation of the institute and the origination of the PAR Plan.

Is it not fundamental that management must constantly seek for new

and improved methods of producing, distributing, and utilizing the company's product to fulfill its obligations to the company's customers, stockholders, and employees? Is not this obligation incumbent on utility and allied manufacturer managements alike? And do not these programs of the gas industry make available management tools no one management could afford? If this be so, how can gas utility and allied manufacturer managements fulfill their obligations unless they actively support both the institute and the PAR Plan?

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Statement by Charles P. Crane

PRESIDENT, CONSOLIDATED GAS ELECTRIC LIGHT & POWER COMPANY OF BALTIMORE

IT would be difficult for me to define the one "most outstanding" problem facing the manufactured, mixed, or natural branches of the gas industry. In the first two instances, the basic problem as I see it is one of economics—how to make manufactured or mixed gas and distribute it at rates which will yield a satisfactory return on investment and coincidentally stimulate growth. This problem has, of course, been much more acute with the straight manufactured gas utilities than with those which have been able to obtain natural gas on advantageous terms and mix such gas with their manufactured product. Increasing rates alone may not cure an unsatisfactory economic condition. The specter of diminishing returns resulting from higher rates so evident in the transit industry could appear in the gas industry as well. Besides, there is the ever-present threat of electric

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competition for the high-rate cooking and water-heating load.

It is not my understanding that economic pressure has been as great on the straight natural gas companies, which, generally speaking, have been able to get along without too much difficulty provided they were able to obtain adequate supplies of natural gas to meet their growing markets.

It may be that there is a serious problem threatening the whole utility industry which so far has received little recognition from the gas companies. I refer to the active steps being taken to bring about an invasion of the field of free enterprise by governmental agencies. It is true that the spearhead of this activity is at present directed towards the electric and other industries, but I cannot help viewing with regret the apparent lethargy among executives of natural and manufactured gas utilities who have apparently reached the conclusion that their particular type of utility operation can remain a green oasis in an ever-widening area of government nationalization.

When viewed from a long-range viewpoint, it may well be that this problem is as important to the gas utilities as any technical and economic difficulties now existing.



Statement by Claude A. Williams

PRESIDENT, TRANSCONTINENTAL GAS PIPE LINE CORPORATION

How shall we assure our millions of users of an adequate supply of natural gas at a price they are willing to pay?

This is the largest single question

OCT. 12, 1950

to my mind confronting the gas industry.

In stating this proposition, it is assumed that distributors of manufactured and mixed gas will draw more and more on natural gas in their send out, according to current trends.

To maintain an adequate supply of natural gas at a price customers will pay requires (1) finding more natural gas, and (2) added gas transmission capacity.

Natural gas reserves are huge and growing. At the beginning of 1950 we had in the United States more than 180 trillion cubic feet of known recoverable natural gas reserves. Every year since dependable figures have been kept, these reserves have increased despite steadily rising production.

NEW gas reserves are obtainable only by exploratory drilling. How is this search for gas inspired? By assuring those who take the risks a fair price for gas at the wellhead. Any Federal or state policy, however well intentioned it may be, that discourages the search for gas will only operate to limit gas and make it cost the user more.

Now there is a wide difference between "known recoverable" natural gas reserves and *available* reserves. It is common knowledge that some of the largest owners of natural gas will not sell any. These owners are engaged in activities corollary to natural gas. They withhold their gas from market to avoid being held to be natural gas companies under the Natural Gas Act of 1938, as the act currently is interpreted. Governmental policies

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that discourage owners from selling gas restrict the future supply of gas and in the end make it higher to users.

It's possible in the future to have big reserves of natural gas *available* in the producing fields. Having this gas available in the homes of consumers 1,500 miles or more away is something else. Gas can only be transported by pipeline.

If consumers are to have more gas there must be more pipe-line capacity. Federal and state authorities have it within their power to restrict future pipe-line capacity. They might permit more capacity but under such burdens as would preclude the increased capacity being financed.

Any Federal and state pattern of policies, the effect of which is to choke off future increased pipe-line capacity, must result in less gas to consumers and at higher prices.

The gas industry must get these simple facts over to its customers. With the help of their customers the industry must get these same facts over to Federal and state legislative and administrative bodies.

Statement by S. B. Ireland

PRESIDENT, CITIES SERVICE GAS COMPANY

THE most outstanding problem facing the natural gas industry during the next twelve months will be how to serve the ballooning peak-day requirements of low load factor space heating in territories presently having natural gas service.

New gas reserves must be found and attached. New transportation facilities must be designed, financed,

and constructed. But above all, old methods of meeting peaks by use of facilities at town border or consumer level must be reviewed, improved, and expanded, or new ones developed. Some of the possibilities are a more extensive use of storage in depleted gas fields, by liquefaction or by the recently developed absorption process. The use of reformed gas or of substitute or additive fuels at town border or consumer level offers a fertile field for investigation.

This great upsurge in space-heating demand has arisen because the price of gas under regulatory restraint has been unable to keep pace with the price of other fuels. This regulatory restraint, its theories, its formulas, and the methods and results of their application during a period of generally rising prices could well be the subject of study leading to appropriate legislative changes. We should be treating the cause instead of the symptoms.

The public must be educated to accept as fair and reasonable the attitude of the industry and of its solutions of the many phases of this space-heating problem.

All of these related things, in my opinion, constitute the problem to which the industry as a whole must give its coöperative attention.

Statement by James B. Black

PRESIDENT, PACIFIC GAS AND ELECTRIC COMPANY

To those of us in the business of selling natural gas, it seems clear that the maintenance of adequate supplies of gas is now and perhaps always will be the basic problem of the industry.

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try. Solving that problem nowadays, however, leads inevitably to the end problem of the industry, that of maintaining adequate earnings.

As gas consumption grows and utilization becomes more diversified, large amounts of new capital are required to finance expansion. The utilities must be prepared to go to the money market under favorable conditions. The competition for investment dollars is keen, and the success with which new issues of utility securities attract investors depends upon the degree of earning stability the utility can demonstrate.

The trend of fixed and operating costs is still upward. The cost of building is greater than it ever has been before. There is every reason to believe that taxes will increase again in the near future. The wholesale cost of natural gas, often transmitted long distances by pipeline, tends to rise as the demands upon producing fields grow steadily larger. These costs obviously must be reflected in the rate structures, and gas companies with long records of rate reductions reluctantly find themselves forced to ask

for rate increases. A rate increase case presents a public relations problem for the company and the regulatory commission alike. It is a problem that must be met squarely by both, however, because a utility must have adequate earnings if it is to serve its customers well, if it is to maintain its credit, and if it is to attract investment capital for necessary expansion.

We believe the approach to this problem is to make the facts known to the general public—to tell our story. It is axiomatic that we are serving the public interest by investing in the new facilities necessary to meet the growing domestic and industrial demands, and that our higher fixed and operating costs must be reflected in rates. The alternative to higher rates would not be in the public interest, for it would mean curtailing industrial and other uses of gas and conversion to other more costly and less desirable types of fuel. Whenever the public knows and understands the facts which justify rate increases, we believe the earnings problem will be simplified.

Starting Project Snowballs

“WITHOUT being dogmatic, it seems reasonable to insist that any proposal to use Federal funds to aid state operations should at least be supported by a spontaneous demand for the project within the states themselves. Instead, the usual discussion of these projects is characterized by an intensive and costly campaign on the part of the bureaucracy concerned or by some powerful outside agency like the National Education Association or the Corps of Army Engineers—often supported by no detectable grass-roots demand at all. Having started the ball rolling, the avenging bureaucrats can sit back and watch its progress, relying on state officials to throw up their hands and say, ‘It’s cockeyed, but if they’re throwing money around, we’d better get our share!’”

—EXCERPT from *The Saturday Evening Post.*



New Tools for Gas Service

Rapid introduction of natural gas into many areas and communities, which had not even considered such service until a short time ago, has inevitably brought sudden operating and regulatory problems involving factors of supply and demand. Here is an account of how one gas company did some practical pioneering on two fronts: (1) heating rates; (2) coping with alternative heating supplies.

By KENNETH D. KNOBLOCK*
PRESIDENT, WISCONSIN SOUTHERN GAS COMPANY

It is probably true that no two gas utility companies are exactly alike with identical problems, but it is equally true that some problems are common to many gas operating utilities. The foregoing cliché is what prompts me to explain two developments within my company's organization. Both were the result of practical effort to cope with two rather difficult operating problems. It may well be that such experience may prove helpful to other utilities confronted with similar problems.

1. *The Two-part Heating Rate*

Wisconsin Southern Gas Company converted to natural gas distribution early in 1946, after struggling along with indifferent success for many years as a manufactured gas property. With natural gas, we faced the future with

bright hopes and the feeling that our immediate and final success was assured. Our disillusionment was both prompt and complete.

We felt that we were somewhat "unique" because we served a summer resort area and because our peak load came in the summer. We had visions of high-load factor operation, which, coupled with a two-part "demand and commodity charge" type of wholesale natural gas rate, would result, we felt sure, in a very low wholesale cost of gas. We were also "different" because we were, at the time, the one and only natural gas utility in the state. Our larger company neighbors and our public service commission took an unusual interest in what we did—and how—and why—we did it.

OUR initial retail rates were based on a cheerful and optimistic forecast of our future. We adopted a con-

*For additional personal note, see "Pages with the Editors."

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ventional "block" type retail rate substantially as shown in the table below.

We intended that gas for space heating would be sold to the customer at the rate of 7 cents per hundred cubic feet.

In the beginning of our natural gas operation, coal and oil enjoyed less than the usual price advantage over our gas. We were, generally speaking, closely competitive with oil, and it did not take our customers long to sense a "bargain." The general public resentment against the oil companies for their "rationing" of oil during the war, coupled with the efforts of a swarm of business-hungry heating dealers who were confronted with gas space-heating restrictions in both Chicago and Milwaukee, and who moved in on us, helped us build up a respectable house-heating load in a very short time.

DURING the course of our load-building activities, the competitive position of gas changed, due to the increase in oil prices and the gradual rise of coal prices resulting from increased coal mining costs and higher railroad rates. It wasn't long before gas, our premium fuel, became the cheapest fuel.

Almost before we knew it, we had used up our natural gas allocation and we, too, had to impose restrictions on the sale of gas for house heating.

While our gross revenues were increasing by leaps and bounds, we found

to our dismay that our expenses were following closely behind, and instead of a high-load factor, we had a "common garden variety" low one that resulted in higher wholesale gas costs than we had anticipated. Our former "high" summer peak became our low period of the year because of the huge increase in our heating load. Not only did our purchased gas cost rise, but we were also compelled to increase the capacity of our transmission and distribution systems, and, as a natural sequence, we outgrew our original operating organization. As a matter of fact, our service department had to be quadrupled in size. We realized then and there that something had to be done.

So we took a critical look at ourselves and, after a careful analysis of our operations, we came to these conclusions:

The space-heating load we had connected and were serving had:

(a) Made it necessary for us to enlarge our distribution system and greatly increase our capital investment.

(b) Made it necessary for us to expand our operating organization.

(c) Increased our peak daily load, lowered our load factor, and increased the unit cost of gas purchased.

(d) Actually reduced our net income.

And to cap the climax, we had a long waiting list of impatient customers clamoring for natural gas heat.

IT was obvious to us that, under our existing retail rates, we could cap-



Service Charge: 60¢ net per meter per month, plus
Commodity Charge:

	800 cubic feet @ 27¢ per hundred cubic feet
First	800 cubic feet @ 27¢ per hundred cubic feet
Next	1,700 " " " 16¢ " " "
"	2,500 " " " 8¢ " " "
Excess	7¢ " " " " " "

NEW TOOLS FOR GAS SERVICE



Usefulness of the Dual-fuel Burner

ONE important part of our general operating program is the sale and use by our customers of the 'dual-fuel' gas and oil burner. We think it has a very significant place in the future of the gas business, especially the heating part of that business. The dual-fuel burner is one that is equipped with automatic controls actuated by a sealed-out-of-doors thermostat that switches the fuel from gas to oil on cold 'peak-load days' and back to gas on the milder days."

ture the entire heating market if we could get enough gas to serve that market. It was also quite plain to us that if we did capture the market, we would have to build an entirely new distribution plant to serve such a load. All of which added up to an economic and a physical impossibility.

Eliminating the other more or less technical aspects of the situation, here is our solution of the problem. We decided to :

(1) Increase the heating rate so as to economically limit the market to one that we were financially and physically able to serve.

(2) Adopt a form of heating rate that would, in effect, require the heating customer to pay a demand charge. Our reasoning was that the collective demands of our space-heating customers caused the demand that was the basis of the demand charge we had to pay the pipe-line company, so, they in turn should pay that demand charge.

(3) Offer a real incentive to heat-

ing customers who would stay off the peak-load periods. These would be seasonal heating customers, or fall-spring users, and users of the dual-fuel type of gas-oil burners.

A DETAILED analysis of our revenues and expenses, by classes of customers, showed clearly that the heating customers were the cause of our higher operating costs and that they were being "carried" by our residential users—the good old range and water-heater users.

This faithful and uncomplaining group—the real backbone of our business, was being overcharged! With the renewed sales activity of electric companies whose generating capacities are now catching up to their demands, we were in a dangerous and unsound position. Our best market was vulnerable to our vigorous and alert competitors—the electric companies.

So we did the obvious : We reduced

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our rates to nonspace-heating customers and increased our heating rates enough to accomplish our purpose of obtaining sufficient revenues, limiting our market, and encouraging the use of off-peak (no demand charge) type of load.

Our new heating rate is as shown in the table below.

After a formal rate hearing, our commission approved the new rate schedules which, we confess, are frankly experimental. We have not yet had enough experience to know whether or not we have developed the proper type of two-part rate. We also confess that we made a few mistakes.

We do know that we failed to fully explain and "sell" our heating customers on the idea that we were reducing the commodity charge at the same time we were imposing the demand charge, and that, on an over-all basis, our heating charges were not being increased excessively. Our first gas bills clearly set out the demand charge as a separate item which resulted in our being visited by a host of puzzled and, in a few cases, indignant customers who came into our stores for an explanation. When we explained the situation, and our customers under-

stood, most of them were reasonably well satisfied.

We anticipated some trouble during the summer when gas bills were higher than they were for the same months of the previous summer. But the number of bill complaints during the past summer were less than normal. A change in our method of billing whereby our "demand charge" is not set out separately has helped and we have made it our practice to tell new house-heating customers just exactly what they can expect to pay as demand charges in the summer months. Such candor and frankness have failed to scare away prospective heating customers, nor has it hurt our customer relations, but it has stimulated interest in our dual-fuel equipment. Such a policy obviously should reduce high bill complaints in the future. We may yet have to spread the demand charge over eight or nine heating months, rather than over twelve months. But—come what may—we think the two-part heating rate in some form or other has solved our problem.

The Dual-fuel Burner

ONE important part of our general operating program is the sale and



Service Charge: 60¢ net per meter per month, plus

*Demand Charge:

	M-BTU of set burner input	\$1.40 net per meter per month
20	" "	2.10 "
31-40	" "	2.80 "
41-50	" "	3.50 "
Excess	" "	@ .50 net per 25M BTU per month

Commodity Charge:

First 800 cubic feet	@ 21¢ per hundred cubic feet
Next 1,700 "	15¢ "
" 2,500 "	7¢ "

Excess " " 5.5¢ " " "

*Demand charge does not apply to seasonal heat customers, or those using dual-fuel space-heating equipment with automatic control equipment limiting gas use to periods when outdoor temperatures are 25° or higher, or some temperature limit approved by the commission.

NEW TOOLS FOR GAS SERVICE

use by our customers of the "dual-fuel" gas and oil burner. We think it has a very significant place in the future of the gas business, especially the heating part of that business.

The dual-fuel burner is one that is equipped with automatic controls actuated by a sealed-out-of-doors thermostat that switches the fuel from gas to oil on the cold "peak-load days" and back to gas on the milder days. Because the peak-day demand of this type of burner is very low, we can take on and serve many more of them than we could of the straight gas users. In fact, we think we can economically serve 60 per cent of our entire heating market if half of that number are dual-fuel burner users.

With it we have several excellent sales arguments, including the availability of a stand-by fuel in case of pipe-line failure, no restrictions on its immediate use, and its very low operating cost. In fact, under our rates, no other fuel or combination of fuels can even approach its low operating cost.

It permits us to offer a customer something in place of a flat and uninspiring, "Sorry, no gas available." When we tell a prospective customer that he *can* have that type of gas heating; then discuss its low operating cost advantages over straight year-round gas, he is usually interested. He also knows he is in line for year-round gas when it becomes available (if he wants it).

THE dual-fuel burner opens the door to a huge potential market; namely, those customers who are now using oil burners and who already

have fuel oil tanks, oil pipelines, pumps, etc. We can tell this class of customer, "Keep your oil equipment in place. Just let us add a gas burner and controls and we'll show you some real saving!"

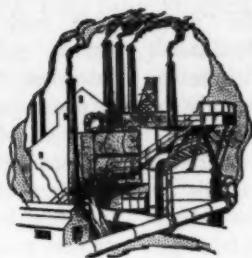
Every oil burner user is a potential dual-fuel gas customer, and this market is an important segment of the entire heating market.

SOME gas men say "It's too dangerous. If the customers get mad at us, or if oil prices drop way down, the dual-fuel users can switch to straight oil operation and where will we be?"

Our answer to our brother gas men is, "Make your rate low enough so that they can't afford to use oil exclusively. Here the two-part heating rate, with the demand part drastically reduced or eliminated for the dual-fuel user, is an ideal rate, and you can afford to offer it!"

The rest of the answer is: Consumers know from experience that oil prices fluctuate widely. We know that persons who have once used gas for house heating rarely, if ever, willingly go back to oil house heating.

In our opinion, the dual-fuel burner permits the gas company to take whatever part of the house-heating market it wants and has the gas supply and the distribution system to serve. The key to the dual-fuel market is the rate structure and the inducement offered to the heating customer therein. Our "key" was the two-part heating rate. In fact, the two-part heating rate and the dual-fuel burner are two new and important tools in our conduct of our own little segment of the gas business.



Underground Gas Storage As a Service Factor

The natural gas industry is looking around for bigger and better "holes in the ground" and other facilities for storing gas near the points of distribution so as to give better service to more people during winter peaks.

By LARSTON D. FARRAR*

THE increased use of natural gas and "mixed" natural and manufactured gas by millions of consumers who never before have had this wonder fuel is one of the phenomena of the post World War II years.

In fact, the construction of new gas pipelines and the servicing of additional homes and industries with natural gas has been nothing short of terrific in recent years. Few Americans have kept up with the swift developments in this field of endeavor, although millions of them, in their households, have enjoyed the blessings of natural gas service for the first time.

The New York Times recently com-

mented editorially on the huge sums that had to be expended and the intricate engineering problems that had to be solved to get natural gas into New York city, where consumers in 1949 for the first time were able to use natural gas piped from Texas.

"Much more is involved in bringing natural gas to the East than digging a trench for big pipes," the *Times* pointed out. "Every 50 miles a pumping station has to be erected to push the gas under rivers, over plains, and over mountains. Then there are the pilots overhead who keep an eye on the lines all the way from Texas to New York and who spot trouble quicker than a line walker can on foot; the huge 'scrubbers' that launder the gas, so that it arrives at the burner clean; the dispatchers who must meet the increased

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demand of hundreds of communities when the temperature drops, or there is a burst of local industrial activity. The truth is that the transmission of natural gas from Texas to the eastern seaboard is so great an engineering feat that there should have been more bunting on display, more band music, more flag waving."

THE *Times* editorialist does not get around to a comment on one vital management problem facing natural gas transmission and distribution companies in recent years. That problem is underground storage of natural gas.

Some idea of the challenges faced by natural gas engineers and management can be seen in the fact that customers using house-heating service in a typical northern community require nine times as much gas for all purposes in a normal January than they require in August. When the temperature drops to zero, the demand rises to 15 times as much gas as on a summer day.

Three years ago, PUBLIC UTILITIES FORTNIGHTLY carried an extensive article on the underground storage of gas.¹ The article was both a résumé of developments that had taken place and a prophecy of things to come. If anything, that forecast was exceedingly conservative in predicting that there would be increased use of old, depleted natural gas fields for storage of "new" natural gas piped in from the South and the Southwest. It is perhaps safe to say that no one, at that time, realized just how very vital the problem of gas storage would become in management circles due to the con-

tinued rising demand for natural gas.

Information on *all* the underground gas storage fields in the nation at that time, gathered and released by the Interstate Oil Compact Commission, was to the effect that the nation's underground storage areas then contained more than 120 billion cubic feet of natural gas at their maximum peak in 1947. The maximum practical capacity of such underground storage fields was estimated at that time at 250 billion cubic feet.

LESS than three years later, N. C. McGowen, president of the United Gas Corporation, speaking at a natural gas meeting, declared that "gas is now stored in pools in 13 states in such volume that it must be taken into account when we add up our reserves. . . . On December 31, 1949, 'stored' natural gas amounted to 288 billion cubic feet. This was an increase of 88 billion cubic feet over the previous year."

As of today, there likely are more than 300 billion cubic feet of gas in storage in the U. S., for the amount has been increasing month by month for years, as is indicated by Mr. McGowen's statement.

In other words, in a little more than two years, stored natural gas had exceeded by a substantial volume the amount it was believed possible to store in the summer of 1947. The reasons are apparent to anyone who has observed natural gas engineers and management at work: First, natural gas management has searched out old depleted fields that had been forgotten long since and has put them to work in storing new gas; second, new pressure techniques have been developed

¹ "Mother Earth's Storage Tanks." By E. G. Dahlgren and Larston D. Farrar. Volume XL, No. 6, September 11, 1947.

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by means of which more gas can be kept in existing fields than previously had been considered possible; third, many companies have constructed liquefied gas plants so that they might have the use of these "tank farms" at various strategic locations for use in case of extreme demand.

The search for old gas fields to be used for storage places for newly piped-in gas goes on apace. It has not let up in years and is not likely to let up any time soon, as natural gas is being planned for more and more areas which never before have had the opportunity to enjoy such service.

THE Texas Eastern Transmission Corporation's 1949 annual report, for instance, points to the importance of finding such storage places in the New England area. The report states:

In connection with its proposal to serve New England, and in connection with its present operations, the company is investigating the possibilities of storing natural gas in underground reservoirs (occurring by reason of the depletion of old gas fields) in areas near the eastern end of its system. The company has not progressed sufficiently far in its investigation to determine as yet whether or not it will undertake such a project.

Economic Fact No. 1 confronting the management of the long, overland natural gas pipelines has been that the

lines must be operated at peak capacity to pay off, from an investment standpoint. Since use is "off" by consumers in summer months, such peak transmission could not be carried out unless adequate storage facilities were available in one way or another. The problem for distributing companies which buy gas at the "city gate" is to build up some kind of a reserve supply against the peak demand. In bitterly cold weather, the consumers have the greatest need for a home-heating fuel. Being caught short at a crucial time damages public relations, and if it happened often enough, patronage desertion would result. All in all, solving the problem of adequate storage of huge amounts of natural gas in areas rather close to the consumers was and still is the biggest single problem facing natural gas management.

Engineers long ago proved, by use, the extreme economy of storing natural gas in old, depleted fields. Back in 1915, in Welland county, Canada, the first successful underground storage of natural gas was accomplished. A year later, the second such experiment was undertaken and operated successfully at the Zoar field, near Buffalo, New York.

UNDERGROUND storage operations involve the injection of natural gas under high pressure to depleted,



G"THE increased use of natural gas and 'mixed' natural and manufactured gas by millions of consumers who never before have had this wonder fuel is one of the phenomena of the post World War II years. In fact, the construction of new gas pipelines and the servicing of additional homes and industries with natural gas has been nothing short of terrific in recent years."

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or partially depleted, gas and oil fields with a resultant build-up in pressure. The process can be compared to the pumping of air, gas, or any other gaseous substance that can be stored, into any container, and closing the central opening for future use.

The storage fields usually are replenished during off-peak periods by using surplus gas from pipelines, by taking gas continuously from so-called stripper gas wells that must be producing all the time to justify economic operation, and the withdrawal of gas from highly competitive areas. The need for storage areas located near the large distributing centers is obvious.

There are two types of storage fields. Small pools containing no more than two or three billion cubic feet of gas at 500 pounds restored pressure are adaptable for peak-load conditions, as it is possible to obtain high deliverability in a short time from this type of pool with a minimum of gas tied up in permanent "cushion." Large, or medium-sized, pools are useful for balancing out a system, or increasing the load factor on a long-distance pipeline. This type of pool can handle regular daily injections during the summer months and steady daily withdrawals during the winter months.

A comparison of the annual reports of the Columbia Gas System, Inc., and subsidiary companies, for 1946 and 1949, reveals how much emphasis has been placed on underground storage by natural gas companies.

The 1946 report pointed out that the company was using 16 storage fields, which contained on December 31st, of that year, some 38.6 billion cubic feet of gas. This was about 10

billion more than was in storage only two years before. In 1946, according to the report, about 12 billion cubic feet were withdrawn from storage, with about 15 billion put into storage.

THE 1949 annual report, noting that the system continued to "expand . . . the underground storage capacity," added these pertinent facts:

The demand for gas has grown steadily and enormously since the war's end far beyond reasonable expectations based on past experience. We can now meet it. Sales of gas in 1949 reached an all-time high.

To handle (our) tremendous load factor, the system had to make three major efforts:

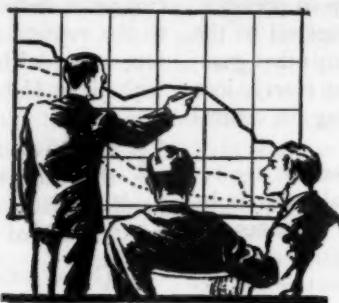
First, we had to get more gas—in quantities available only from the Southwest—to supplement the system's supplies in the Appalachian area.

Second, we needed more underground storage capacity—so the system could take southwest gas at uniform daily rates the year 'round and thus obtain it at a lower average cost; and have enough gas near the customers when they need it most—in winter.

Third, we had to increase the capacity of our transmission and distribution facilities to handle the greatly increased volumes of gas.

In order to meet the challenge posed by its customers, Columbia made, among other contracts, a "seller's option" contract which called for a guaranteed delivery of 20 billion cubic feet per year (equivalent to an average of 50,000,000 cubic feet per day), to be delivered at various times during the year when the supplier's lines were not tied up with other demands.

"The fact that we have large underground gas storage facilities makes a contract of this type possible," the



Demand for Gas by House-heating Customers

"SOME idea of the challenges faced by natural gas engineers and management can be seen in the fact that customers using house-heating service in a typical northern community require NINE TIMES AS MUCH gas for all purposes in a normal January than they require in August. When the temperature drops to zero, the demand rises to 15 TIMES AS MUCH gas as on a summer day."

management noted in Columbia's report. The underground storage capacity of Columbia has increased year by year. The result was a stored supply that totaled more than 101 billion cubic feet on November 1, 1949—about one-third of all the stored natural gas in America. Some \$13,500,000 was spent to develop this new storage capacity—and \$12,571,000 to fill it with gas.

IN addition, Columbia developed a stand-by supply above ground for gas storage. At a cost of \$5,700,000, the corporation built 12 liquefied petroleum gas plants. These "tank farms" are located strategically, intended for use only in times of extreme demand, and they eliminate the need for more costly facilities that would be required to meet extremely high peaks.

The importance which modern natural gas management and public regulatory authorities attach to gas storage is revealed in the annual reports of the various regulatory authorities or those of the various natural gas distribution companies.

The 1949 annual report of the New York Public Service Commission had this to say on the subject:

In order to meet peak winter needs, natural gas companies accumulate gas in storage fields during the summer periods for withdrawals the following winter. These fields are necessary because it is economically impractical to construct long-distance transmission lines with sufficient capacity to handle maximum winter requirements if the lines remain relatively idle during the remainder of the year.

From 1947 to 1948, Home Gas Company, Iroquois Gas Corporation, and

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Republic Light, Heat & Power Company, whose storage fields are located in New York state, increased their stored gas by 2.3 billion cubic feet. From 1948 to 1949, these companies added to their reserves 3,480,000,000 cubic feet, a substantial gain. Allegany Gas—North Penn System and Pennsylvania Gas Company, whose storage fields are located in Pennsylvania, increased their volume in storage by 1,007,000,000 cubic feet from 1947 to 1948, and from 1948 to 1949 the increase added 2,568,000,000 cubic feet. Similar gains were made in the gas stored during 1949 by United Natural Gas Company, which supplies natural gas to Iroquois Gas Corporation, by the New York State Natural Gas Corporation, which sells natural gas wholesale to many New York state gas companies, and by the Columbia Gas System, which supplies natural gas to the Home Gas Company.

THE over-all supply and storage situation was summarized in the New York Public Service Commission's opinion of October 5, 1949, in the following language:

The natural gas supply situation of the Consolidated and the Columbia systems has been materially improved. They have been authorized to receive hundreds of millions of additional cubic feet of gas daily from the Texas Eastern Transmission Corporation and the Tennessee Gas Transmission Corporation, the principal transcontinental pipe-line companies bringing gas from the Texas area to the Pennsylvania-New York state area. These two systems have increased the volumes of gas in their various storage fields by 40 per cent to 60 per cent. Considerably greater volumes of gas were available for storage purposes, but could not be stored because of the physical limitations of the existing storage facilities. The surplus of gas available during the past spring and summer was accentuated by the mild

weather during the past winter which produced disproportionately decreased sales and also because of marked decreases in the industrial use of gas. The two principal transcontinental pipe-line companies of the Texas Eastern and Tennessee Gas companies and the two principal local pipe-line systems, the Consolidated and Columbia systems, have spent and are continuing to spend millions of dollars to increase the daily capacity of their lines.

Texas Gas Transmission Corporation receives its gas supplies—other than for its new 26-inch line—from gas fields in northern Louisiana under contracts with independent producers, from other interstate pipe-line companies, and in small amounts from gas fields in Illinois and Kentucky. Total purchases from these sources in 1949 were 52.2 billion cubic feet as compared with 20.2 billion cubic feet in 1948.

TEAS GAS has an underground storage field near Oaktown, Indiana, which has been in operation since 1945. The field has a maximum daily deliverability of about 6,000,000 cubic feet. This company also is developing an additional underground storage field in Indiana, which is expected to be in operation by 1951. It was originally estimated that this field would provide daily deliverability of approximately 20,000,000 cubic feet, but work done on the field during 1949 indicates that considerably more than that amount will be available. Negotiations are also being conducted for three other storage fields.

Pacific Lighting Corporation's supplement to its 1949 annual report pointed out that underground storage operations continued to be a major

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source of supply during periods of heavy demand, as well as in times of emergency. The company's storage field at Goleta, California, is now capable of delivering over 275,000,000 cubic feet of gas in one day, and, if necessary, of sustaining this delivery for more than thirty days before the pressure reaches the point where the subsequent storage capacity may be impaired by the encroachment of water.

In addition to underground storage at Goleta and Playa del Rey, arrangements were made during the year to use a reservoir in the Buena Vista Hills field, near Taft, California. This field is estimated to have a capacity to receive gas of about three billion cubic feet, and a daily withdrawal rate of about 20,000,000 cubic feet.

A total of over 14 billion cubic feet was injected into underground storage reservoirs during the year, and approximately 11 billion cubic feet were withdrawn. It is expected that the withdrawals which are continuing will be replaced before the start of the 1950 fall-winter heating season.

THE annual report (1949) of the Equitable Gas Company, Pittsburgh, Pennsylvania, goes into great detail on storage operations.

At the start of the 1949-1950 winter season, over 16 billion cubic feet of gas was in storage, representing a maximum 24-hour delivery capacity of 258,400,000 cubic feet. It is estimated that these present storage pools have a total capacity of 32 billion cubic feet when higher pressures are attained. Too much emphasis cannot be placed upon the importance of the gas storage expansion in respect to the part it has played and will continue to play in the growth of your company and in the stability of such growth. The existence of these large underground storage pools located strategically with respect to the market has enabled the company to place into storage quantities of gas sufficient to maintain its production and gas purchase volumes at almost the same rate in summer as in winter—thus, all facilities are used more efficiently and the gas from the pipe-line companies is purchased at a lower rate than would be possible otherwise. Moreover, the availability of substantial storage reservoirs has made it possible for the company to add large volumes of seasonal gas house-heating business—probably the most permanent type of new load—while keeping commitments for additional gas purchases at a minimum.

During 1949, the Equitable Gas

Q"CONSERVATIONISTS in the field of oil and natural gas all express the hope that the day soon will come when practically all natural gas will be utilized or stored. State agencies, such as the Texas Railroad Commission, Oklahoma Corporation Commission, the Louisiana Department of Conservation, and others, constantly are exerting every possible effort to find means of eliminating gas wastage so that the nation may enjoy the benefits of natural gas without fear of shortages during cold weather . . ."

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system expended nearly \$6,000,000 for capital improvements. Approximately \$830,000 was used for the further development of underground storage. It is estimated that the Equitable Gas system construction requirements for the year 1950 will approximate \$6,200,000. And added expenditures in 1950 are contemplated for a new compressing station to increase the delivery capacity of the pipelines feeding the Pittsburgh area, and to facilitate the storage of additional amounts of gas in the new Pratt storage pool.

CONSUMERS POWER COMPANY of Michigan, 1949 annual report, explained its storage operations in these words :

The gas department and the company's subsidiary, Michigan Gas Storage Company, also pushed forward projects to increase the supply of natural gas available to customers. For new stockholders, it should be explained that most of the natural gas distributed by Consumers is brought to Michigan by the Panhandle Eastern Pipe Line Company from Kansas, Oklahoma, and Texas. This gas is delivered to the Michigan Gas Storage Company, which in the summertime transmits a large portion of it to storage fields in the north-central part of the lower peninsula. In cold weather, when the use of gas by Consumers' customers is greatest, stored gas is released from the fields, transmitted to various city gates, and delivered to the company for distribution. Consumers operates its gas business in 28 counties.

THE 1949 annual report of Consolidated Natural Gas Company, New York, observed that the underground storage of gas in former pro-

ducing gas fields in the Appalachian area grows in importance as the seasonal demand created by house-heating customers continues to increase. The gas obtained from Texas and mid-continent fields is purchased uniformly throughout the year in order to obtain the most advantageous price. During the summer months, a portion of the gas purchased is stored in 22 underground storage pools in the system's service area for use when needed during the winter heating season. The report stated :

The system companies are engaged in a large-scale program of developing and improving underground storage pools. In the past five years, the number of acres of former producing gas lands devoted to the storage operation has increased from 67,000 to 109,000. The number of wells through which gas is pumped into and withdrawn from the storage pools has increased from 431 to 846, and the compressor station horsepower devoted to this purpose has more than doubled. The larger volumes of gas carried in storage inventory and improvements in facilities have enabled the system to more than double the maximum rate at which stored gas can be withdrawn and delivered to markets. The program of increasing capacity and deliverability of storage facilities, and the building up of larger inventories of stored gas, will be continued as part of the system's effort to insure reliable gas service to its customers.

THE 1949 annual meeting report, made by the president of the Columbia Gas System, Inc., to his stockholders, is both revealing as to the use of underground storage by this huge company, and also summarizes an excellent series of facts about gas as a fuel for Americans.

A gas system such as Columbia's is

very complex. About 32,000 miles of pipeline are used to transport and distribute gas over an area of about 200,000 square miles. Gas flows into this pipe-line system from thousands of wells in the Appalachian area, from underground storage fields, from southwest pipelines, and from liquefied petroleum gas plants.

THE demands for gas fluctuate widely because of variations in weather conditions over this sizable area. One day demands may be heavy in northern Ohio. The next day they may be much less there but then they may be heavy around Pittsburgh, Pennsylvania, or Charleston, West Virginia, or Binghamton, New York. At times all sections of the system's service area may have heavy demands simultaneously.

The report states:

During the past few months we have had ample opportunity to observe our new property in actual operation. It functioned very satisfactorily. We had an adequate supply of natural gas. Our underground storage provided us with the deliverability needed during periods of cold weather when the demand for gas was high. Our transmission system had sufficient capacity, except in a few minor locations, to carry the required quantities of gas to markets and the flexibility needed to meet our customers' fluctuating requirements. . . . On February 20th, we took 580,000,000 cubic feet of gas from storage. However, on January 25th, we had more gas available from Appalachian and southwest sources than we required, and, even after our own production had been cut back, 240,000,000 cubic feet of excess gas was available and was placed in storage. On the other hand, several times during this winter we made use of our propane plants to meet extreme peaks . . .

THIS volume of natural gas may be comprehended by comparing its heat content with the heat content of other types of fuel. Allowing for the relative efficiency of the various fuels, the heat value of the gas which Columbia sent out on March 2nd was equal to 1,900 railway coal cars (95,000 tons) of bituminous coal, or 1,560 tank cars (15,600,000 gallons) of heating oil. Also on a basis of its heat content, it would have been sufficient to serve, for about six days, the combined average 1949 daily gas requirements of the cities of New York, Chicago, and Philadelphia. It would have provided sufficient heat to cook all the meals for one day for about two-thirds of the people in the United States.

While natural gas is lighter than air, it does have weight and the gas Columbia sent out on March 2nd weighed about 45,000 tons. To move this gas through its system to the various points of market, Columbia used compressing units with a total of 23,000 horsepower.

The Columbia report gave some interesting examples of what natural gas does for a mythical family of five people occupying a 6-room house:

Their gas range used 30 cubic feet of gas at a fuel cost of three-fourths cent. Their gas refrigerator also used about 30 cubic feet of gas during the 24-hour period with a fuel cost of 1½ cents. The hot water required for dish washing, laundry, bathing, and other purposes was supplied by an automatic gas water heater which during the 24-hour period used 60 cubic feet of gas costing 3½ cents. Their automatic gas furnace maintained comfortable room temperature and consumed 1,000 cubic feet of gas costing 58 cents. The entire cost of the natural gas consumed in this home for a winter's day was 65 cents.

UNDERGROUND GAS STORAGE AS A SERVICE FACTOR

For a summer's day, when no heating was required, the cost would be 7 cents.

With costs such as these, coupled with its cleanliness and convenience, you can understand why there is such a demand for natural gas.

THE annual report, 1949, of the American Natural Gas Company, attributed its increase in earnings "principally . . . to the use of storage fields in Michigan to store gas in the summer period to meet winter peaks." The report noted that such storage materially reduced the necessity for manufacturing very expensive high BTU gas at Detroit to supplement the supply of natural gas during peak demand periods.

No résumé of underground storage would be complete without mention of the helium gas storage maintained at the Cliffside field, near Amarillo, Texas, by the U. S. Bureau of Mines.

The bureau here stores excess helium gas from its Exell helium plant north of Amarillo. The Exell plant receives its helium-bearing natural gas from the Channing area of the Panhandle fields. Approximately 50,000,000 cubic feet of helium has been saved from Channing gas and injected into the Cliffside field. More than 18 billion cubic feet of natural gas have been produced from the Cliffside field since its discovery in 1923, and billions since January, 1945, when it was used first for storage.

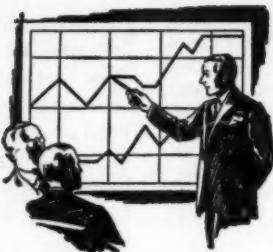
The relatively pure helium that is injected into the field is contaminated to some extent with natural gas containing less than 2 per cent helium, which must be repurified before use. The primary purpose of the storage is conservation of the helium.

CONSERVATIONISTS in the field of oil and natural gas all express the hope that the day soon will come when practically all natural gas will be utilized or stored. State agencies, such as the Texas Railroad Commission, Oklahoma Corporation Commission, the Louisiana Department of Conservation, and others, constantly are exerting every possible effort to find means of eliminating gas wastage so that the nation may enjoy the benefits of natural gas without fear of shortages during cold weather anywhere at any time.

The Interstate Oil Compact Commission has been interested in the benefits of underground gas storage for many years. In 1942, the commission's research and coördinating committee, in a survey of production, conservation, and utilization of natural gas, recommended the greater use of depleted or near-depleted oil and gas reservoirs for natural gas storage and conservation.

As a matter of fact, the commission constantly has urged companies to utilize underground storage to absorb excess gas supplies and to maintain the operation of small stripper gas wells which doubtless would be abandoned if they had to be shut in during the summer months.

While the use of Mother Earth's lungs for natural gas storage seems to have been confined thus far to North America, the occurrence of natural gas is widespread, so it seems certain, eventually, that such storage will be used all over the world. Geographically, natural gas is produced in North America, South America, Europe, Asia, and Africa.



Higher Taxes and the Utilities

The personal views of an experienced expert in practical utility economics on the effect of certain proposed higher taxes on the public utility industry where special attention is given to the likely revival of a Federal excess profits tax.

By CHARLES WIGAND*

THE utility industry is a regulated industry in that Federal, state, and/or municipal agencies fix the price which the industry may charge for its services. Effective regulation precludes a regulated industry from having excessive profits. It also eliminates the possibility of any war profiteering such as President Truman has condemned in recent messages to Congress.

It is generally accepted that the utilities constitute a rapidly expanding industry, not merely as a matter of choice, but also as a matter of compulsion. To provide service to the constantly growing number of customers in ever increasing volume, large amounts of new capital are required to construct new facilities.

Under previous excess profits tax laws, utilities have paid substantial

so-called excess profits taxes, not because they had excessive profits, but because of the basis of calculation prescribed by law.

THE law provided two methods of determining the excess profits credit and the earnings in excess thereof were subjected to excess profits tax; namely, the invested capital and the average earnings methods. The invested capital method was not used extensively by utilities because the average earnings method generally was somewhat less harsh. Under the invested capital method the money or property paid in for stock and the accumulated earnings and profits had to be calculated on an income tax cost basis, which, only in the most unusual circumstances, represented the real cost to the taxpayer, owing to the fact that utility systems were usually developed through merger and other

*For personal note, see "Pages with the Editors."

HIGHER TAXES AND THE UTILITIES

tax-free transactions in which the cost to the predecessor carried through in determining the invested capital for tax purposes. Furthermore, only 50 per cent of borrowed capital was included and, as you appreciate, all utilities have a high proportion of debt.

UNDER the average earnings method the excess profits credit consisted of 95 per cent of the average base period excess profits net income with a growth factor, plus 8 per cent of net capital additions, and minus 6 per cent of net capital reductions. The base period, 1936 to 1939, included years when industry was recovering from the worst depression we ever had, and base period earnings did not represent a fair measure of credit for application to the excess profits tax years. No matter what group of years is used as a base period it would not be representative of reasonable earnings for any subsequent year because of the lag between the time expenditures were made for plant additions and when the facilities started earning.

Under either the invested capital or the average earnings method the excess profits tax law previously in effect failed to allow a deduction for normal tax and surtax in arriving at the amount subject to excess profits tax.

While taxes are an element of cost and as such should be passed on to the consumer, regulatory commissions are reluctant, to say the least, to grant an additional \$7 of increased revenue to produce \$1 of earnings. This was the situation with excess profits taxes in the neighborhood of 85½ per cent. Therefore, any diminution in earn-

ings, resulting from an excess profits tax, falls on the investor.

Under the previous excess profits tax law, the very purpose of collecting additional revenues for the Federal government was defeated by some regulatory commissions, causing refunds to be made to customers when utilities were found to be subject to Federal excess profits tax. Although such taxes were created by the formula of calculation and were not based on true excess profits, such refunds were ordered even though the company was earning less than an allowed rate of return.

Regulation Creates Different Conditions

BECAUSE of the need for substantial increased revenues, all taxpayers must be expected to bear their reasonable share of increased taxes, but when excess profits do not exist and the base for determining what income is subject to excess profits taxes is created by formula, then a regulated industry is placed in the position where the excess profits tax is levied on income which the utility should be allowed to earn for its security holders. The result, it is obvious, is a diminution in earnings. Such a situation impairs the value of utility securities and makes difficult the sale of equity stocks at a reasonable price. This is of serious consequence to utilities, particularly at this time when they are faced with raising so much new capital required for plant construction.

When an excess profits tax law is framed to raise tax revenues as a result of a formula, rather than to siphon off true excessive profits, regulated utilities are variously affected, de-



Impact of Excess Profits Tax On Utilities

"BECAUSE of the need for substantial increased revenues, all tax-payers must be expected to bear their reasonable share of increased taxes, but when excess profits do not exist and the base for determining what income is subject to excess profits taxes is created by formula, then a regulated industry is placed in the position where the excess profits tax is levied on income which the utility should be allowed to earn for its security holders. The result, it is obvious, is a diminution in earnings."

pending largely on their tax cost, their capital structures, and also the adequacy or inadequacy of earnings included in a base period.

Obviously, it is difficult to incorporate in any tax bill sufficient alternatives to protect all companies against payment of excessive taxes. The purport of statements which Senator George and Treasury Secretary Snyder recently made concerning an excess profits tax indicates that past experience proved the difficulties of writing an excess profits tax that will not be full of injustices. Those who oppose such a levy urge that it is inflationary, encouraging spending and waste; is difficult to administer; and is not as big a revenue producer as appears on the surface. Recognizing that popular pressure probably makes a war profits levy inevitable, they urge that it be enacted only after the most careful consideration.

ASUBCOMMITTEE of the EEI and AGA Joint Taxation Accounting Committee has been studying the matter of excess profits taxes and we can get as many differences of opinion as there are representatives present, because practically no two situations are affected alike. Nevertheless, there are certain fundamental principles on which agreement is general and these are:

Fundamental Principles

1. That any excess profits tax law applied to regulated utilities should be applied on a formula which corresponds with the public utility commission's base for computing rate of return. Under such a formula, if utilities earned an excessive return because of increased earnings and economies which might result from a better load factor under war production conditions, any such excess would be subjected to Federal excess profits taxation.

HIGHER TAXES AND THE UTILITIES

2. Under any method of determining excess profits, net income deductions should be allowed for normal tax and surtax in ascertaining the income which will be subjected to excess profits tax. This treatment was accorded under the second revenue act of 1940 but discontinued thereafter.

3. Under the invested capital method of determining excess profits net income, borrowed capital should be included at 100 per cent thereof instead of the 50 per cent limitation provided in the prior law.

4. Under either the invested capital method or the average earnings method of determining excess profits net income, there should be allowed an increased credit of substantially 8 per cent on all capital additions, whether equity, borrowed, or earnings and profits made during the excess profits tax year and subsequent years.

5. Due to the time lag in placing substantial amounts of construction into service an additional credit should be given for capital additions created within two years prior to the effective date of an excess profits tax law.

6. Under the invested capital method of determining excess profits net income, interest on 100 per cent of borrowed capital, which is included in invested capital, should be added back to obtain excess profits net income.

7. Adequate relief provisions should be incorporated in any law to take care of hardship cases.

A report of the special committee on excess profits taxes of the National Association of Railroad and Utilities Commissioners, issued in 1944, clearly recognized the inapplicability of an excess profits tax on regulated industry.

These recommendations are in part similar to those outlined above and lend support to the hope that many, if not all, of these recommendations may be made effective in any proposed excess profits tax bill.

NARUC Committee Studying New Aspects

THE National Association of Railroad and Utilities Commissioners has recently appointed a new committee to study the effect of any proposed tax legislation and any other defense legislation which may affect the companies subject to commission regulation, under the chairmanship of Justus F. Craemer of the California commission.

It seems to me that the state utility commissions are cognizant of the fact that any so-called excess profits tax law like the last one nullifies the effectiveness of state regulation, in that it regulates the utility earnings through Federal taxation.

“THERE is great basic confusion between accountancy and economics—first, because economics know only one value; second, because ‘profit’ as the word is used and practiced by accountancy, today represents a combination of economic rent on the value of land and economic profit on invested capital.

“Money is a medium of exchange, not an absolute measure of economic value. Yet accountancy as a mathematical science uses money as a unit of measure and it uses the money of this year, of last year, of the year before that, and ten years ago, all in the same schedule of assets and the same schedule of expenses.”

—ROY A. FOULKE,
Vice president, Dun & Bradstreet, Inc.



Washington and the Utilities

Control of Short Gas Supplies Uncertain

THE Federal Power Commission may find itself in a quandary should production for defense and a severe winter bring about the necessity for emergency allocations of short supplies of natural gas. This arises from President Truman's assignment of natural gas controls to the Department of Interior.

Any emergency allocation of short supply which the commission may order in the future—as it has done for the past two heating seasons—will be subject to change by Interior, an agency that will be jealous of the powers assigned it by the President. And, parenthetically, it is noted that relations between Interior and the commission have not been on too cordial a level for months as a result of the latter's apparent leaning toward private utilities wishing to construct hydroelectric developments in areas where Interior has claimed prior and paramount development rights.

Any concentration of military orders in regions where natural gas is the major fuel used by industry and for space heating is certain to engender severe local shortages. If this situation arises, will FPC claim the prerogative of rationing gas or will Interior assert its new powers delegated to it by the President under the Defense Production Act?

THE answer to both questions may well be in the affirmative, but it is a certainty that Interior, supported by the National Production Authority, will have the final say, despite the close personal friendship existing between the President and FPC Chairman Mon C. Wallgren.

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THERE will be room for other conflicts—perhaps with Interior and the FPC both arguing with the National Production Authority. This could come about through the NPA's assignment of military orders to areas where Interior and FPC would be in agreement that stepped up industrial consumption of natural gas would work hardships on the users of natural gas for space heating.

The picture is not a pleasing one, especially to those with recollections of the confusion which existed in Washington early in World War II when President Roosevelt scattered war powers among several Federal agencies. It will be recalled that it was not until all controls of manufacturing, fuels, and power were concentrated in the War Production Board that near chaos was ended. Seasoned Washington observers are agreed that an effective speed up of the defense program in the next year will necessitate a similar move by President Truman. It will have to be done, they assert.

Still other defense conflicts which may affect the utilities were pointed up in the September 28th issue (page 435) under the heading "Heavy Weather Ahead for Defense Administration."

Steel for Gas Pipelines

ALTHOUGH the National Production Authority will be many months getting around to setting up a system of priorities for steel and other strategic materials, there is no indication in Washington at this time that natural gas transmission companies will then experience any serious difficulty in obtaining pipe for expansion, especially into those re-

WASHINGTON AND THE UTILITIES

gions of large industrial production.

Further, there are indications that when—and if—a system of priorities for steel becomes necessary, pipe for gas and oil transmission lines will occupy a near-top position on the civilian priorities schedule, as it did during World War II.

It is noted here that NPA Administrator Harrison has initiated his huge task in a spirit of coöperation, rather than of coercion. He has asked representatives of the steel and copper industries to survey their own capacities and to advise the need for increased production facilities, controls, and priorities—indicating a preference for voluntary allocations as compared with a tough set of priority regulations.

This tendency on the part of Harrison, coupled with the fact that demands of the military establishment and of the pipe-line systems are not extremely heavy, would indicate there is no cause at this time for uneasiness with respect to pipe.

Meanwhile, Defense Department officials have said military demands of the next twelve months will call for approximately 6—not over 7—per cent of the steel industry's capacity (finished products). During 1949, slightly more than 4 per cent of finished steel went into pipe for transmission lines. This figure may move up to 5 per cent during 1950, according to reputable sources; but even so, it will put no real strain on the steel industry, although it may necessitate curtailment of finished steel supplies for less essential civilian needs.

Interior and REA Feel Budget Knife

CARRYING out a congressional mandate that at least \$550,000,000 be pared from the 1951 fiscal appropriations for nonmilitary agencies, the Budget Bureau's first slash was felt by the Department of Interior and the Department of Agriculture.

Interior has been directed to save between \$60,000,000 and \$70,000,000—about 65 per cent of which will be lopped

from the budgets of the Bureau of Reclamation and Interior's power agencies; the remainder, approximately \$20,000,000, will be spread throughout the rest of the department.

Agriculture has received orders to reduce by \$100,000,000 the loan authority of the Rural Electrification Administration and the Farmers Home Administration. Up to this time, REA has not worked out the necessary curtailments of its rural electrification and rural telephone programs. Since the inception of the latter nearly one year ago, loan allocations have been at a slow pace, indicating there may be considerable difficulties in actually finding borrowers for the more than \$50,000,000 lending authority available—\$32,500,000 in the 1951 appropriation bill, and \$21,500,000 carried over from the fiscal year ended June 30th.

With respect to rural electrification loans, Congress made available \$500,000,000, and there was a carry-over from the previous year of around \$80,000,000. However, REA officials concede the demand for farm electrification loans is "leveling off," but they do not say to what extent. Meanwhile, the agency has pending more than two score applications for generating and transmission (super co-op) loans, totaling approximately \$200,000,000, while more than 500 distribution co-ops seek another \$365,000,000.

It has been several months since REA has made a super co-op loan.

Credit Controls on Appliance Sales

THOSE utilities marketing electrical and gas appliances need not expect any tightening of credit controls until after the first of the year.

Sources close to the Federal Reserve Board feel the present requirements—15 per cent initial payment with eighteen months' maturity on items retailing for more than \$100—will suffice for several months yet.

However, they point out there may

PUBLIC UTILITIES FORTNIGHTLY

come a time when the 15 per cent down payment will be applicable to items retailing for less than \$100, with instalment sales restricted to those articles which can be classed as essential, such as refrigerators, water heaters, washing machines, etc. This would bar instalment sales of television and radio sets.

Senator-elect Supports Private Utility's Bid for License

ON a recent visit to Washington, North Carolina's Democratic senatorial nominee, Willis Smith of Raleigh—a past president of the American Bar Association—said the Federal Power Commission should grant the Virginia Electric & Power Company a license to build a hydroelectric dam at Roanoke Rapids, near the Virginia-North Carolina boundary.

Smith, who said the industries of the Roanoke Rapids region need the power that could be generated at the site by Vepco, informed the Federal Power Commission of his views and urged prompt and favorable action. FPC Chief Examiner Frank Hampton has recommended that Vepco be authorized to build the Roanoke Rapids dam, but the full commission has not passed on the matter.

In the meanwhile, Interior Secretary Chapman has offered strenuous objection to the Vepco application on the ground that development of the Roanoke Rapids site is a job for his department as part of a comprehensive plan for Federal development of the Roanoke river basin.

The plan Chapman referred to is one that was drawn up by the Army Corps of Engineers during the past two or three years, and involves the construction of 11 reservoirs, all of which would have electric power installations.

Excess Profits Levies

HOUSE action in demanding enactment of an excess profits tax bill during

OCT. 12, 1950

the current (81st) Congress puts the regulated utilities on notice that they must speed up their staff work in preparing for hearings before the House Ways and Means Committee a short time after the November elections, perhaps earlier.

The House move, spearheaded by Representative Herman P. Eberhardt (Democrat, Pennsylvania), was for campaign effects; nevertheless, it definitely binds House and Senate to consider excess profits legislation prior to the advent of the 82nd Congress next January.

This is not particularly agreeable to House Ways and Means Chairman Robert L. Doughton (Democrat, North Carolina), nor to Senate Finance Committee Chairman Walter F. George (Democrat, Georgia), both of whom hold the view that more time is needed for study and hearing.

Senator George, an astute student of taxation, is known to regard excess profits levies as "dangerous" to those businesses whose profits are held to a fixed level by law, or through the regulatory processes of the various states.

The House action raises the question of taxation of co-operatives. During Senate debate on the "interim" tax measure, Senator George, in requesting Senator John J. Williams (Republican, Delaware) to withdraw his amendment providing for taxation of the earnings of co-operatives, declared:

I myself think that we should strive to impose an appropriate tax provision so far as co-operatives are concerned . . . There are appropriate steps which should be taken to tax them, and that will be done in the next tax bill. (Italics supplied).

MAJORITY Leader Scott Lucas (Democrat, Illinois) likewise gave assurance that co-op taxation would be a part of the next tax bill, while Senator Eugene D. Millikin (Republican, Colorado), ranking minority member of the Finance Committee, asserted there is no desire to postpone consideration of co-op taxation indefinitely.

Financial News and Comment

By OWEN ELY

The Growth of the Gas Industry And Its Financing

THE growth of new pipelines has been so rapid in the postwar period that there are now 118 different companies which own or operate pipelines. We are indebted to Alec Crowell, natural gas consultant of New Orleans, for the map on page 525 which (while not very legible in its greatly reduced size) will illustrate the present complexity of the pipe-line maze.

From the middle of 1945 to January 1, 1950, the industry constructed 26,513 miles of natural gas pipelines, costing a total of nearly \$1.7 billion. In 1949 alone, 7,537 miles of lines were built, costing \$600,000,000, to bring gas to more than 100 cities of over 50,000 population. About 12,500 miles of line will be added if the FPC acts favorably on applications before it.

More than 264,000 miles of gas pipelines now link the gas fields of the South-



west with the individual consumers in 35 states that are using the fuel.

Long-range forecasts of future interstate movements to various areas (millions of cubic feet daily) are as follows:

	1951-52	1955-56
New England	—	140
Middle Atlantic ...	1,150	2,550
South Atlantic	310	590
East Central	1,600	2,600
West Central	950	1,120
Other	1,450	2,030

EVERY major city in the United States will be receiving natural gas soon, but some areas such as New York and New England will for the near-term future receive only "token amounts," to enrich their manufactured gas and provide a little dump gas during the summer for fuel. Major eastern and southern cities which will be benefited through FPC authorizations already approved include New York, Jersey City, Philadelphia, Washington, Baltimore, Chattanooga, Knoxville, and Nashville. Cities destined to get natural gas for the first time under pending authorizations include Jacksonville, Savannah, Charleston (South Carolina), Boston, Springfield (Massachusetts), Providence, and Schenectady.

The latest output figures for the gas industry are shown in the table at top of page 524.

The sales index for the gas industry (using 1935-39 as 100 per cent) stood at 277 in June. For individual components the figures were: natural gas 300, manufactured gas 129, mixed gas 185.

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PUBLIC UTILITIES FORTNIGHTLY

	Month of June, 1950		12 Months Ended June 30, 1950	
	Mill. McF	% Gain over 1949	Mill. McF	% Gain over 1949
Natural Gas	258	20%	3,421	13%
Manufactured Gas	29	D7	429	1
Mixed Gas	12	14	143	1

2

NATURAL Gas Reserves—Nearly 13 trillion cubic feet of new gas reserves were developed in 1949, while production approximated 6 trillion cubic feet, leaving a net increase of nearly 7 trillion in reserves and raising estimated total reserves to 180 trillion cubic feet. However, some of the new discoveries, being in off-shore or deep formations, may prove too expensive for use over the near future. The Southwest still supplies three-quarters of the nation's reserves, and other areas—the Midwest, Pacific, Appalachian, and Rocky Mountain areas in order of importance—showed little net change in 1949.

Most promising sources of future new gas reserves are the Gulf coast tidelands, west Texas, and the San Juan basin in New Mexico. Ultimately United States reserves may reach 300-350 trillion cubic feet, E. Holley Poe estimates. Western Canada may also have 25 trillion, although reserves are more widely dispersed and involve higher gathering costs than in United States gas areas.

House Heating—A major reason for the rapid gain in the residential use of natural gas has been the installation of gas-heating facilities in new homes (as

well as replacement of oil burners and coal furnaces in older homes). In 1940, less than 3,800,000 homes were gas heated, but last year the figure was 7,400,000, with 700,000 added last year. In 1949, 35 per cent of all residential gas customers in the United States were using gas for central and space heating, and sales of gas-heating appliances now exceed those of oil heaters. As more natural gas becomes available, the trend should increase, except as competitive fuels (coal and oil) may limit use in some areas where they are cheaply priced.

PEOPLES GAS LIGHT & COKE COMPANY of Chicago has increased the number of its residential heating customers from 30,000 in 1936 to 58,000 in April this year, but has some 48,000 new applicants to take care of. The new subsidiary, Texas-Illinois Natural Gas Pipeline, should be in operation by the last of 1951. Eventually, there may be 400,000 space-heating customers in Chicago, it is said.

Consolidated Natural Gas, second largest integrated system, at the end of 1949 was serving 426,000 house-heating customers compared with 185,000 in 1945. Ninety-five per cent of new homes

UTILITY SECURITIES—CURRENT "YIELD YARDSTICKS"

		1950 Range	1949 Range
	Recent	High Low	High Low
*Government Bonds—Tax-exempt	1.26%	1.38%	1.24% 1.82% 1.36%
—Taxable	2.38	2.38	2.15 2.40 2.14
*Utility Bonds—Aaa	2.64	2.65	2.55 2.77 2.56
—Aa	2.71	2.73	2.63 2.84 2.64
—A	2.80	2.81	2.75 3.02 2.77
—Baa	3.19	3.20	3.14 3.45 3.15
Utility Preferred Stocks—High Grade	3.74	3.82	3.70 4.02 3.80
—Medium Grade	4.18	4.19	4.13 4.57 4.19
Utility Common Stocks	6.11	6.14	5.27 6.26 5.58

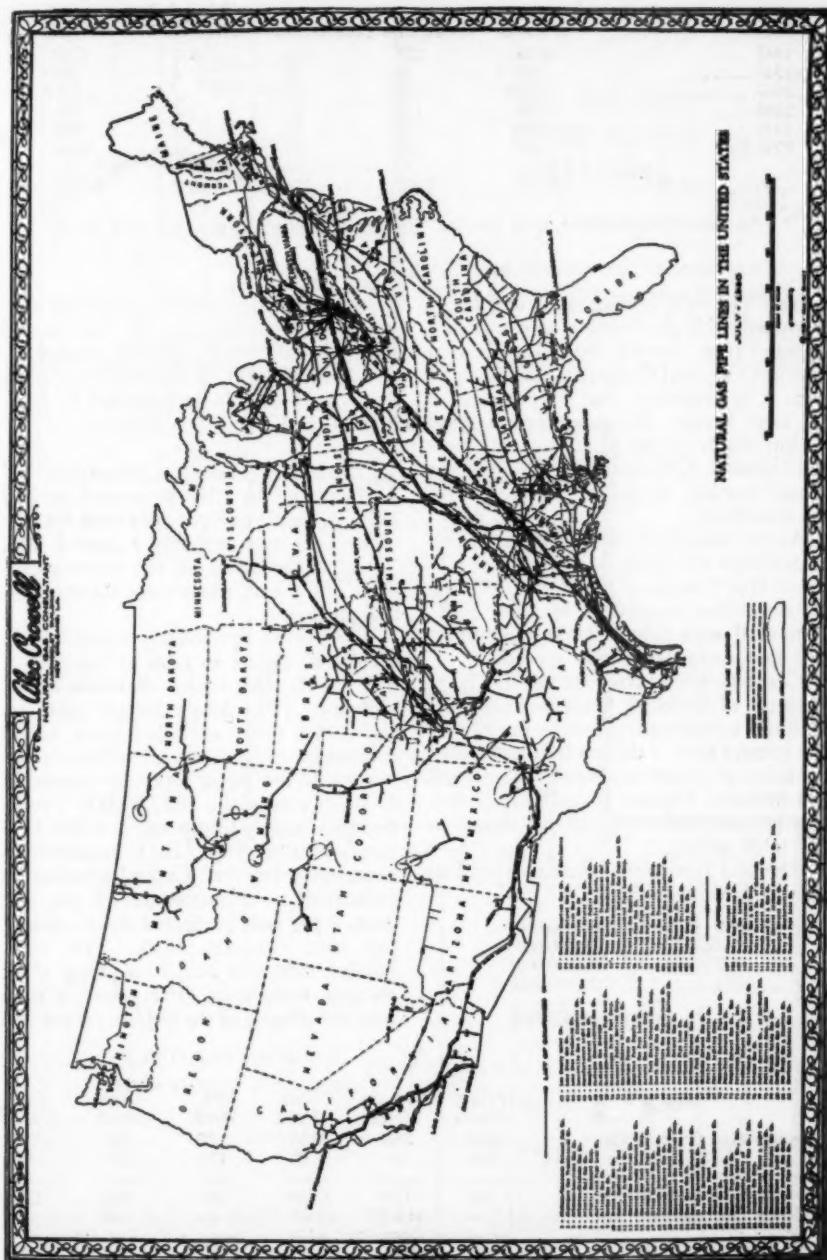
Latest available Moody indexes are used for utility bonds and preferred stocks; Standard & Poor's indexes for government bonds and utility common stocks. *Long-term.

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FINANCIAL NEWS AND COMMENT



PUBLIC UTILITIES FORTNIGHTLY

<i>Year</i>	<i>Natural</i>	<i>Manufactured</i>	<i>Mixed</i>	<i>Liquefied Petroleum</i>	<i>Total</i>
1945	\$126	\$27	\$ 6	\$ 1	\$160
1946	237	58	11	4	310
1947	623*	111	17	7	758*
1948	629	117	19	4	769
1949	848	90	18	3	959
1950 Est.	954	94	15	3	1,066
Total 1945-50 ...	\$3,417	\$497	\$86	\$22	\$4,022

* Includes \$143,000,000 cost of the two "Big Inch" pipelines, previously used for oil.



in this system's service area are being equipped with gas-heating units. In the 7-state area served by Consolidated Natural Gas and Columbia Gas System, Inc., it is estimated that 95 per cent of all new homes being built this year within reach of the pipelines will have gas furnaces. Columbia Gas sells gas for house heating to about one-quarter of its customers.

As an example of what happens when restrictions are lifted, Michigan Consolidated Gas Company added 120,000 new house-heating customers in July, 1949, compared with only 109,000 home-heating customers previously served.

Construction — Because of the large expense of building pipelines, pumping facilities to maintain pressure, etc., by far the greater part of the gas industry's construction program has been in the natural gas division. Figures in millions of dollars for the years 1945-50 are shown in the table above.

The gas companies plan to spend as follows for construction:

1951	\$981,000,000
1952	428,000,000
1953	332,000,000
1954	327,000,000
	\$2,068,000,000

Approximately half the proposed construction expenditures in the period 1950-54 will be for pipelines, though all but \$200,000,000 of the \$1,410,000,000 earmarked for this purpose will be spent in 1950 and 1951, it is reported.

F INANCING—The gas industry's total financing in 1949 amounted to \$1.5 billions, a gain of 8 per cent over the previous year and probably a record high. Types of financing for the various divisions of the gas industry are shown in the table below.

The operating company totals may be divided as shown in table at top of page 528 for the two major divisions of the industry. (The totals do not agree because the table excludes some mixed companies which were included above.)

One of the latest pipe-line companies to finance was the \$81,000,000 Trunk-line Gas Supply Company, in which Panhandle Eastern Pipe Line Company owns a majority interest. Capital structure is estimated to approximate 75 per cent debt, 8 per cent preferred stocks, and 17 per cent common stock. The entire bonded debt was sold to a group of insurance companies. The common stock was not offered to the public; 60 per cent

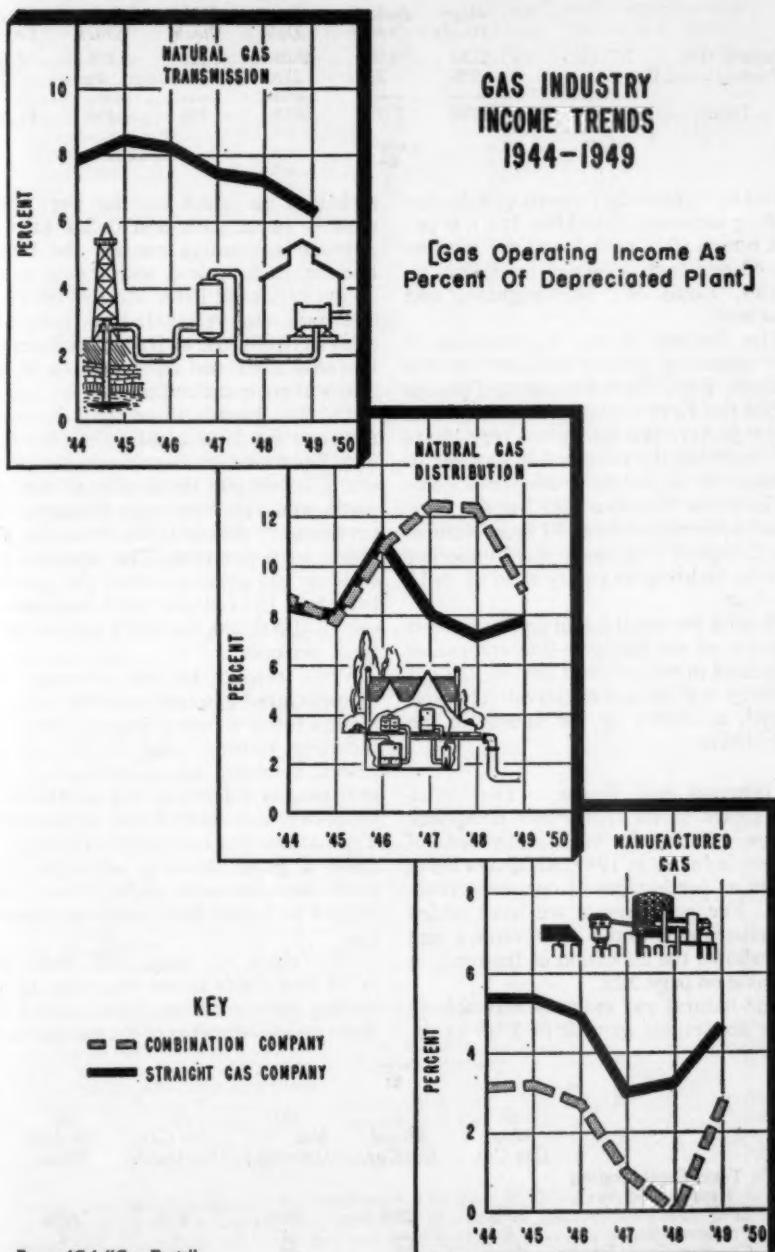


	<i>Mtge. Bonds</i>	<i>Deb. & Notes</i>	<i>Total Debt</i>	<i>Pfd. Stock</i>	<i>Com. Stock</i>	<i>Total Capital</i>
Straight Gas Oper. Utils.	\$350	\$66	\$416	23	53	\$492
Comb. Gas & Elec. Oper. Utils. ...	546	64	610	178	137	925
Total Operating Cos.	896	130	1,026	201	190	1,417
Holding Companies	—	45	45	—	10	55
Total	\$896	\$175	\$1,071	201	200	\$1,472

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FINANCIAL NEWS AND COMMENT



From AGA "Gas Facts"

PUBLIC UTILITIES FORTNIGHTLY

	<i>Mfg. Bonds</i>	<i>Deb. & Notes</i>	<i>Total Debt</i>	<i>Pfd. Stock</i>	<i>Com. Stock</i>	<i>Total Capital</i>
Natural Gas	\$551	\$98	\$649	128	107	\$884
Manufactured Gas	239	31	270	60	49	379
Total	<hr/> \$790	<hr/> \$129	<hr/> \$919	<hr/> 188	<hr/> 156	<hr/> \$1,263



is held by Panhandle Eastern (which virtually guarantees Trunkline has a 6 per cent return after taxes) and the remaining 40 per cent is owned by Ralph K. Davies, Louis W. McNaughton, and associates.

The Federal Power Commission is now assuming greater authority in the financial field, since President Truman vetoed the Kerr amendment to the Natural Gas Act. The law is not very clear-cut regarding the commission's power to regulate the capital structure of new companies in the pipe-line field, but the commission recently ordered El Paso Natural Gas Company to do some stock financing in order to bring its equity ratio up to 15 per cent.

Despite the small initial equity interest in some of the big pipe-line companies organized in the postwar period, the gas industry in general is conservatively capitalized, as shown by the figures in the table below.

EARNINGS and Taxes — The AGA shows in its *Gas Facts* composite income accounts for various divisions of the gas industry in 1949, all figures being shown as percentages of operating revenues. For convenience we have added miscellaneous income to revenues and then shown the allocation of the total, in the table on page 529.

The natural gas industry was able to show accelerated growth in 1949 as re-

strictions on house heating were lifted entirely or in part, and dollar sales to ultimate consumers crossed the billion line for the first time, with a gain nearly 10 per cent over 1948. Most of the revenue gain was residential, as industrial sales were affected by irregularities in the business level and by decreases in the prices of competitive fuels.

In the manufactured gas industry, revenues for 1949 of \$479,000,000 were only 3 per cent greater than in the previous year, despite the results of rate adjustments. The mixed gas industry with revenues of \$96,000,000 showed a decrease of 6 per cent. The liquefied petroleum gas utilities, while the smallest branch of the industry with revenues of only \$22,000,000, showed a gain of nearly 20 per cent.

With respect to net earnings, the manufactured gas section of the industry made a better showing than in 1948, contributing factors being lower fuel oil prices, increased use of natural gas for enriching or reforming, use of other new processes, and delayed rate adjustments. The natural gas companies continued to make a good showing, although their profit margins were slightly lower, due in part to higher field prices for natural gas.

The chart on page 527 from the AGA *Gas Facts* shows the ratios of operating income to net plant account for three major segments of the gas industry.



	<i>58 Mfg. Gas Cos.</i>	<i>3 Mixed Gas Cos.</i>	<i>181 Nat. Gas- Operating</i>	<i>64 Nat. Gas- Distributing</i>	<i>38 Nat. Gas- Trans.</i>
% Total Capitalization					
Represented by:					
Long-term Debt	37%	28%	49%	47%	60%
Preferred Stock	5	—	4	9	4
Common Stock Equity ..	58	72	47	44	36

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FINANCIAL NEWS AND COMMENT

	<i>58 Mfg. Gas Cos.</i>	<i>3 Mixed Gas Cos.</i>	<i>181 Nat. Gas- Operating</i>	<i>54 Nat. Gas- Distributing</i>	<i>38 Nat. Gas- Trans.</i>
<i>Revenues, etc.</i>	100.6%	103.5%	101.7%	101.6%	101.3%
<i>Allocation of Revenues, etc.:</i>					
Maintenance	7.6	65.1	4.8	4.9	3.8
Other Expenses	64.4	5.8	8.2	5.1	10.9
Depreciation, etc.	5.0	5.9	6.3	5.9	7.4
Taxes on Income	3.8	9.2	4.8	5.7	4.2
Taxes-misc.	8.8	4.5	3.7	2.8	5.4
Charges	3.3	—	.6	.6	.6
Preferred Dividends5	8.1	9.1	6.2	9.7
Common Dividends ...	4.0	4.9	4.2	4.1	6.2
Surplus Income	3.2	—	—	—	—
Total	100.6%	103.5%	101.7%	101.6%	101.3%



The trend of earnings has been down for the natural gas transmission companies, and mixed for the distributors of natural gas; while the manufactured gas companies have recovered substantially from the disastrous dip in earnings in 1947-48.

Earnings trends in 1950 have been very favorable for the natural gas companies due to the benefits obtained from

increased allowables for oil production and improved prices for natural gas by-products. These substantial earnings gains may provide some margin of safety for the impact of increased Federal taxes on income. The impact of excess profits taxes on the newer gas companies may be rather heavy because these companies must use the invested capital base.



LIST OF BROKERS' UTILITY STORIES*

Company Analyses

<i>Company</i>	<i>Broker</i>	<i>No. of Pages</i>	<i>Month</i>
Brooklyn Union Gas	A. G. Becker & Co.	2	May
Central Illinois E. & G.	Paine, Webber	1	June
Central Public Util. Deb.	Wertheim & Co.	4	July
Central Public Util. Deb.	Unterberg & Co.	4	—
Cleveland Elec. Illum.	Argus Research	2	July
Consol. Gas of Baltimore	Argus Research	2	June
El Paso Electric	Paine, Webber	1	—
Elec. Bond & Share #	Wiesenberger & Co.	18	—
General Pub. Util.	Josephthal & Co.	2	Aug.
Iowa-Illinois G. & E.	A. G. Becker & Co.	6	June
New England Elec. System	Josephthal & Co.	4	June
Northern Indiana Pub. Serv.	Geyer & Co., Inc.	6	June
Southern Cal. Edison	Paine, Webber	1	June
Tennessee Gas Trans.	Kerr & Co.	4	June

Tax Studies

Tax Impact on Some Utilities	Sutro & Co. (San Francisco) ..	2	Aug.
In Case of a New Excess Profits Tax	Sutro & Co. (San Francisco) ..	3	July
Utilities Stocks and Taxes	Goldman, Sachs & Co.	2	Aug.
Elec. Util. Stks. in a Defense Economy	Shields & Company	6	Aug.
Six Utility Stocks Affording Protection against Excess Profits Taxes	Josephthal & Co.	4	Aug.
Effect of Tax Increases on Pub. Util.	Josephthal & Co.	3	July
Utility Common Share Earnings under Increased Income Taxes	Blyth & Co.	7	July

* Similar lists have appeared in the FORTNIGHTLY of June 22, March 30, and January 5, 1950; during 1949, in the September 1st, May 26th, and March 17th issues; and during 1948 in the December 16th, September 9th, June 3rd, and March 11th issues. # Price, \$5 a copy.

PUBLIC UTILITIES FORTNIGHTLY

RECENT FINANCIAL DATA ON GAS COMPANY STOCKS

		9/15/50 Price About	Indicated Dividend Rate	Approx. Yield	Share Cur. Period	Barnings Prev. Period	% In- crease	Price- Earn- ings Ratio	Div. Pay- out
Natural Gas—Retail									
C	Arkansas Natural Gas	12	.60	5.0%	\$1.26d	\$1.44	D6	9.5	48%
O	Atlanta Gas Light	22	1.20	5.5	2.23je	1.82	23	9.9	54
O	Central Elec. & Gas	9	.60	6.7	1.14je	1.05	8	7.9	53
S	Columbia Gas System	13	.75	5.8	1.11je	.88	26	11.7	68
C	Consol. Gas Util.	11	.75	6.8	1.48je	1.72	D14	7.4	51
S	Consol. Nat. Gas	44	2.00	4.5	4.71je	3.65	29	9.3	42
S	Equitable Gas	20	1.30	6.5	2.22je	—	—	9.0	59
O	Houston Nat. Gas	16	.80	5.0	1.45ju	1.42	2	11.0	55
O	Indiana Gas & Water	21	1.20	5.7	2.16ju	1.59	36	9.7	56
O	Kansas-Neb. Nat. Gas	17	1.10	6.5	1.63d	1.55	5	10.4	67
S	Laclede Gas Light	64	.20	3.1	.80je	.74	7	8.1	25
C	Lone Star Gas	25	1.20	4.8	2.05je	1.97	4	12.2	59
O	Minneapolis Gas	18	1.00	5.6	1.70je	.69	146	10.6	59
O	Mission Oil	37	2.20	5.9	3.60d	2.05	76	10.3	61
O	Mobile Gas Service	27	1.60	5.9	3.03je	2.36	28	8.9	53
S	Montana-Dakota Util.	11	.80	7.3	1.45je	1.35	7	7.6	55
C	National Fuel Gas	12	.80	6.7	1.22je	.75	63	9.8	66
O	National Gas & Oil	6	.40	6.7	.58d	1.40	D59	10.3	69
C	Okl. Natural Gas	30	2.00	6.7	3.05ju	3.17	D4	9.8	66
S	Pacific Lighting	49	3.00	6.1	3.92je	3.59	9	12.5	77
C	Pacific Pub. Service	15	1.00	6.7	2.08d	3.21	D50	7.2	48
S	Peoples Gas L. & Coke	112	6.00	5.4	9.88je	7.96	24	11.3	61
C	Rio Grande Valley	2	.12	6.0	.19d	.20	—	10.5	63
O	Rockland Gas	34	1.70	5.0	4.41d	2.73	62	7.7	39
O	Southern Union Gas	20	.80	4.0	1.58je	—	—	12.7	51
O	Southwest Nat. Gas	6	(a)	—	.43je	.34	26	14.0	—
S	United Gas	18	1.00	5.6	1.51je	1.44	5	11.9	66
S	Washington Gas Light	26	1.50	5.8	3.40je	1.19	186	7.6	44
Averages					5.7%			10.0	
Natural Gas—Wholesale and Pipeline									
S	American Natural Gas	27	\$1.20	4.4%	\$2.25je	\$1.45	55	12.0	53%
O	Commonwealth Gas	9	.15	1.7	.62d	.68	D9	13.5	24
S	El Paso Nat. Gas	24	1.40	5.8	1.84ju	2.26	D19	13.0	76
O	Interstate Nat. Gas	33	2.50	7.6	2.50d	2.03	23	13.2	100
O	Mississippi River Fuel	30	2.00	6.7	2.84je	2.05	39	10.6	70
O	Missouri-Kansas P.L.	38	1.60	4.2	4.24d	1.32	221	9.0	38
O	Mountain Fuel Supply	20	.60	3.0	.91d	.91	—	22.0	66
S	Northern Nat. Gas	31	1.80	5.8	2.53je	2.35	8	12.3	71
S	Panhandle East, P.L.	37	2.00	5.4	2.71je	2.33	16	13.7	74
S	Southern Nat. Gas	35	2.30	6.6	3.78je	3.09	22	9.3	61
O	Tenn. Gas Trans.	26	1.40	5.4	1.78je	1.57	13	14.6	79
O	Texas East. Trans.	16	64% Stk.	—	1.84je	1.33	38	8.7	—
O	Texas Gas Trans.	15	—	—	1.81je	.76	55	12.8	—
Averages					5.1%			12.7	
Manufactured Gas—Retail									
C	Bridgeport Gas	23	\$1.40	6.1%	\$1.88d	\$1.60	18	12.2	74%
O	Brockton Gas Lt.	20	1.40	7.0	1.48d	.43	244	13.5	95
S	Brooklyn Union Gas	36	2.00	5.6	4.39m	—	—	8.2	46
O	Hartford Gas	35	2.00	5.7	2.67d	1.85	44	13.1	75
O	Haverhill Gas Lt.	27	1.80	6.7	2.03ju	2.00	1	13.3	89
O	Jacksonville Gas	30	1.40	4.7	4.77d	6.12	D22	6.3	29
C	Kings County Ltg.	7	.40	5.7	.64d	—	—	10.9	63
O	New Haven Gas Light	26	1.60	6.2	1.70d	1.76	D4	15.3	94
O	Providence Gas	9	.60	6.7	.56d	.73	D30	16.1	107
O	Seattle Gas	12	.60	5.0	1.49d	.70	113	8.1	40
S	United Gas Improvement ..	25	1.40	5.6	2.06je	1.84	12	12.1	68
Averages					5.9%			11.7	

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FINANCIAL NEWS AND COMMENT

RECENT FINANCIAL DATA ON TELEPHONE, TRANSIT, AND WATER COMPANIES

	9/15/50 Price About	Indicated Dividend Rate	Approx. Yield	Share Cur. Period	Earnings Prev. Period	% In- crease	Price- Earnings Ratio	Div. Pay- out
Telephone Companies								
<i>Bell System</i>								
S Amer. Tel. & Tel.	152	\$9.00	5.9%	\$9.90je*	\$9.21*	7%	15.4	91%
O Cinn. & Sub. Bell Tel.	71	4.50	6.3	4.80d	3.76	28	14.8	94
C Mountain St. T.&T.	101	6.00	5.9	6.13je	5.30	16	16.5	98
C New England Tel.	96	4.75	4.9	10.67je	4.59	132	9.0	45
S Pacific Tel. & Tel.	102	7.00	6.9	7.92*my	6.21*	28	12.9	88
O So. New Eng. Tel.	34	1.80	5.3	2.05d	1.91	7	16.6	88
Averages			5.9%				14.2	
<i>Independents</i>								
O Central Telephone	10	.80	8.0%	\$1.21my	—	—	8.3	66%
S General Telephone	28	2.00	7.1	1.76je	\$2.17	D19%	15.9	114
C Peninsular Tel.	40	2.50	6.3	4.69d	4.71	—	8.5	53
O Rochester Tel.	13	.80	6.2	1.30ap	—	—	10.0	62
Transit Companies								
O Chicago S.S. & S.B.	10	\$1.00	10.0%	.91d	\$1.40	D35%	11.0	110%
O Cinn. St. Ry.	5	.30	6.0	.84d	.77	9	7.0	36
O Dallas Ry. & Term.	11	1.40	12.7	1.39d	2.27	D39	7.9	101
O Duluth Sup. Trans.	5	1.00	20.0	.79d	.44	80	6.3	127
S Greyhound Corp.	11	1.00	9.1	1.20m	1.68	D29	9.2	83
O Kansas City P.S.	1½	—	—	—	—	—	—	—
O Los Angeles Transit	4½	.50	11.1	.84d	.93	D10	5.4	60
S Nat. City Lines	9	1.00	11.1	1.75d	1.97	D11	5.1	57
O Phila. Transit	4½	—	—	—	—	—	—	—
O Rochester Transit	4	—	—	—	—	—	—	—
O St. Louis P.S. A.	5½	.50	9.1	.48d	.70	D31	11.5	104
O Syracuse Transit	19	2.00	10.5	.62d	1.40	D13	—	323
O United Transit	3	—	—	.55d	.13	246	5.5	—
Averages			10.7%				7.7	
Water Companies								
<i>Holding Companies</i>								
S Amer. Water Works	9	\$.60	6.7%	\$.81je	\$.89	D10%	11.1	74%
O N. Y. Water Service	115	4.00	3.5	10.67je	6.19	72	10.8	37
<i>Operating Companies</i>								
O Bridgeport Hydraulic	32	\$1.60	5.0%	\$1.57d	\$1.78	D12%	20.4	102%
O Calif. Water Serv.	27	2.00	7.4	2.62ju	2.48	6	10.3	76
O Elizabethtown Water	100	6.00	6.0	8.37d	6.89	21	11.9	72
S Hackensack Water	31	1.70**	5.5	3.35d	2.79	20	9.3	51
O Indianapolis Water	16	.80	5.0	1.33d	1.42	D6	12.0	60
O Jamaica Water Supply	22	1.50	6.8	2.15je	.75	187	10.2	70
O Middlesex Water	53	3.00	5.7	4.87d	4.94	D2	10.9	62
O New Haven Water	57	3.00	5.3	3.45d	3.61	D4	16.5	87
O Ohio Water Serv.	20	1.50	7.5	1.67je	2.15	D22	12.0	90
O Phila. & Sub. Water	25	.80	3.2	3.49d	3.01	16	7.2	23
O Plainfield Union Wt.	68	4.00	5.9	5.09d	5.02	1	13.4	79
O San Jose Water	32	2.00	6.3	2.99ju	2.81	6	10.7	67
O Scranton-Spring Brook	12½	.70	5.6	.89m	.87	1	14.0	79
O Southern Cal. Water	44	3.25	7.4	3.89je	3.49	11	11.3	84
O Stamford Water	55	2.00	3.6	2.35d	2.21	6	23.4	85
O West Va. Water Service	15	1.20	8.0	1.33je*	.47*	183	11.3	90
Averages			5.9%				12.8	

D—Deficit. C—Curb Exchange. O—Over-counter or out-of-town exchange. S—New York Stock Exchange. *Based on average number of shares outstanding. **Also 25 per cent stock dividend. #In order to facilitate comparisons, earnings are calculated on present number of shares outstanding, except otherwise indicated. (a)Stock dividend of 50 per cent payable July 1st, and cash of 10 cents payable same date (on new stock): 25 cents paid in 1949. d—December. m—March. ap—April. my—May. je—June. ju—July.



What Others Think



A Century of Gas Service

CHICAGOANS celebrated a century of gas service recently on the occasion of the one hundredth anniversary of the first street gaslight. The artist sketching the scene one hundred years ago (see cut) seems to have captured the excitement of the occasion in the faces of the spectators at the history-making event.

Harold Smith, writing in the *Chicago Tribune* of September 4, 1950, described the first lamp lighting as follows:

Sundown was a special occasion for Chicagoans a hundred years ago today. Strollers along the dusty main drag, Lake street, curiously eyed the fancy new poles lining the rutted roadway that was alive with wagons and buggies.

The sun vanished over the mud lake plain. In the gathering dusk pedestrians watched ladder-toting lamplighters advance down the glass topped files, tinker for a moment with the lantern atop each post, and then move to the next in a blaze of light. . . .

This was the first night of gaslight for the lusty little city of 30,000. Chicago's first "great yellow way" was ablaze with most of the 99 new gas street lamps that first burned that evening.

The Peoples Gas Light & Coke Company, an active, and since 1907 the exclusive, provider of gas service for the midwestern metropolis, has chronicled the important events of this gas era in an attractive 32-page booklet entitled: "100 Years of Gas Service in Chicago." Quaint sketches, redrawn from old prints of the Chicago Historical Society, and modern photographs support the interesting story of a century of gas progress.

The Chicago of 1850 is described as "a rough and ready frontier town"

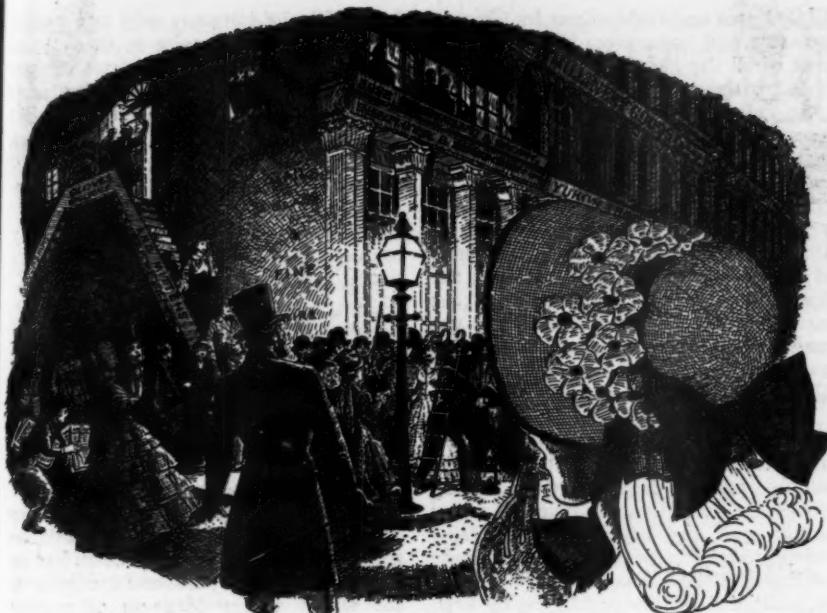
of 30,000, utterly lacking the ordinary comforts of the cities farther east. It was already starting to "burst at the seams" since it was to almost quadruple its population in the following decade. Lights were dim and the ads in the *Journal* offered lamp oils, candles, etc., when on September 4th the lamplighters started on their memorable rounds.

Some of the colorful background in the fledgling gas industry is noted when the booklet points out the types of men who "kept the holders up" in those early days. Chicago had no "native sons" on whom to call. It was the "bristly mustached sons of Scotland" and the "strong-backed sons of Erin" who combined their efforts to keep the gas flowing through the mains.

FUTURE demands for service have always been one of the chief concerns of the company. A few days after the turn-on back in 1850, a *Journal* editorial noted: "The company, judging from the extent of the apparatus, have built for a future day."

Only a month after the initial lamp lighting, a second gas oven went into operation on October 6th, raising production capacity to 22,000 cubic feet—all of which was needed within a few months. By 1855, mains had crossed the river to supply the north and west sides, and a holder was built with a capacity of 300,000 cubic feet. It was in that year that the Chicago Gas Light & Coke Company, formed in 1848, became the Peoples Gas Light & Coke Company. The gas-light era had definitely established itself and was to continue beyond the turn of the century. As recently as forty years ago Peoples Gas was proudly pointing to "400 candlepower light for one cent an hour."

WHAT OTHERS THINK



CHICAGO'S FIRST STREET GAS LAMP

DURING the gay nineties a "new-fangled" stove called a kitchen gas range began to attract widespread attention. Made possible through an adaptation of the Bunsen burner, it was to open a bigger market for gas than had ever been dreamed of up until that time. From about 1898 on into the 1900's demonstrations of gas cooking were conducted on ranges set up in vacant lots. People were invited to bring foods they wanted cooked, and see for themselves how much better and more easily meals could be cooked with gas.

One more enterprising gas range salesman did not wait for the people to come to him but loaded his range on a horse-drawn wagon and carried his message to the people on the street corners. He would drive his wagon under a street lamp, run a rubber hose from the lamp to the stove, and proceed to demonstrate gas cookery. Soon he was turning in orders for ranges as fast as they could be filled.

Figures printed in the Peoples Gas an-

nual report for 1898 had begun to reflect the big change that was under way. They showed that the company had sold 20,343 gas stoves in that year, an impressive total for the time. Thereafter an increasing number of ranges were sold, with the transition to gas cooking about completed at the time of the First World War.

The next period of change, described in the booklet, was the post World War I phase, when the company began to turn to possible markets for gas in industrial Chicago. Peoples Gas sales engineers set out to convince executives and shop superintendents that gas offered important advantages which could improve products and increase profits. The hotel, restaurant, baking, and other commercial enterprises were solicited. By 1929 gas had become a giant in industry and commerce.

World War II production requirements helped to spread still further the many applications of gas to the industrial pattern, so that today more than

PUBLIC UTILITIES FORTNIGHTLY

12,000 uses are made of gas by Chicago industry and commerce. Fifty-eight per cent of all the gas consumed in the city goes for these purposes.

In the year 1929 the company's problems had shifted from those of encouraging a demand for gas to those of finding a supply to take care of the ever increasing demand. A natural gas pipeline was the logical answer. On October 16, 1931, 2,500 man years and 209,000 tons of pipeline later, natural gas from the Texas Panhandle, 1,000 miles to the south, began to flow through the gas mains of Chicago. Came the depression and with it an oversupply situation in the Chicago gas utility.

As general conditions began to improve in the mid-thirties, another mass market was opened for the plentiful gas supply; namely, home heating. During this same time the automatic gas water heater and the new gas refrigerator served to take up more of the gas supply so that in 1949 it was necessary to build an additional pipeline paralleling the first. At present a third pipeline is under construction, this time bringing gas from the Gulf coast area of the Lone Star state.

The story of Peoples is completed with a salute to its many employees. As with most utilities, the Chicago gas firm has proved to be "a good place to work." Of the 4,567 employees, 1,086 of them have

been with the company over twenty-five years. Length of service in many cases runs far beyond the quarter-century mark. Seventeen employees have more than forty-five years of service, while 233 have less than forty-five but more than thirty-five years.

The company's high regard for its employees is seen in the following excerpt taken from the booklet:

Mutual respect between employee and employer constitutes the cornerstone upon which Peoples Gas has built its employee relations program. . . . Peoples Gas has always recognized that the well-being, loyalty, and efficiency of employees are indispensable in maintaining the high standards of service which the public has a right to expect.

In order to perpetuate the interesting story of gas service and its relation to the growth of the city, Peoples has recently donated a permanent exhibit to the world-famous Museum of Science and Industry on Chicago's lake front. Entitled "The Story of Flame Gas," it traces the history of gas from its early discovery to the present, in 21 three-dimensional exhibits. (For a more detailed description of the exhibits, turn to "The March of Events" section of this issue, page 536.)

Gas Facts

COMPREHENSIVE tables of gas utility securities and tabulations of fuels and electric energy consumption by industrial establishments are features of the new issue of *Gas Facts* just published by the bureau of statistics of the American Gas Association.

The annual statistical volume of gas industry information includes all pertinent information relating to operating and financial developments within the industry. It includes data relating to natural gas reserves, production of the several types of gas, customers, sales and revenue trends, as well as information relating to

security issues, construction expenditures, composite balance sheets and income accounts for straight and combination utilities, miles of main, and labor.

An improvement in this year's edition of *Gas Facts* is the increased comprehensiveness of data relating to security issues for the entire period since 1937. Previous statistics related only to those issues reported by the Securities and Exchange Commission for companies subject to its jurisdiction under the Holding Company Act. This year these statistics include all gas utility security issues for which records could be found, whether or

WHAT OTHERS THINK

not subject to the commission. This information now is truly representative of total gas utility financing during the period 1937-39, inclusive.

During the past year the association sponsored jointly with the American Petroleum Institute and the Bituminous Coal Institute a special tabulation of fuels and electric energy consumption by industrial establishments as gathered by the U. S. Bureau of the Census in its 1947 Census of Manufacturers. This survey presents the quantity and cost of principal fuels used, separately by industry groups, in each of the 48 states. Several

summary tables from the report have been prepared and are included in this year's edition of *Gas Facts*.

The bureau of statistics also has summarized and published detailed operating expense information. This is offered in the form of salient operating expense ratios indicating such items as production cost per MCF, sales promotion cost per customer, total operating expense per MCF, and other material. This material is shown in nine new tables covering the years 1947-48, segregated by type of gas company.

—D. T. B.

More Gas-heated Homes

THE gas utilities expect to add more than 3,000,000 new house-heating customers in the next three heating seasons to be 7,217,000 customers who now heat their residences with gas, according to H. Carl Wolf, managing director of the American Gas Association. Canadian gas companies serving 225,000 retail customers hope to add about 13,000 gas house-heating customers in the 3-year period.

The AGA Bureau of Statistics has recently completed a survey which indicated that the gas utilities in America will serve 1,150,000 more house-heating customers during the coming 1950-51 heating season than it did last winter. This means a total of 9,400,000 residential gas customers, or more than 40 per cent of all dwelling units being supplied with utility gas service, are expected to heat their homes with gas during the coming winter.

Prior to the accelerated military preparedness program, with its impending steel allocations, the gas industry expected to add 950,000 house-heating customers in the 1951-52 heating season and another 900,000 house-heating customers in the 1952-53 heating season. The Canadian companies surveyed expect to add 5,000 customers, 4,000 customers, and 4,000 customers, respectively, in the three seasons.

These estimates were based on replies

of 295 individual gas utilities in the United States serving about 19,240,000 residential gas customers or about 90 per cent of the nation's total. In addition six Canadian gas companies submitted their house-heating plans.

THE reporting gas companies indicated approximately half of the anticipated gas house-heating additions were to be installed in new dwelling units with the other half representing conversions from other types of fuel. Following the climatic pattern most of the new heating installations in the northern part of the country will be central heating. Space heaters and wall or floor furnaces account for the majority of heating installations planned for the South and Southwest.

During the past twelve months several new pipelines, or extensions of previously existing lines, were completed. This has enabled many natural gas distributing utilities to lift, either wholly or in substantial part, existing restrictions on additional gas house-heating installations. The availability of natural gas in new areas and continued construction of pipelines can be expected to accelerate further new gas heating installations contingent upon movement of materials as affected by the international situation.

—D. T. B.



The March of Events

In General

Gas Industry Exhibit Draws Thousands

MORE than 100,000 persons have now viewed the gas industry's permanent exhibit installed at the Chicago Museum of Science and Industry. Opened to the public on September 7th in connection with the one hundredth anniversary of gas service in Chicago, the 21-unit exhibit was installed by the Peoples Gas Light & Coke Company.

The most picturesque and elaborate of the 21 units is a large three-dimensional pictorama reconstructing production and distribution machinery that is required by a fully integrated utility serving a great metropolis such as Chicago.

Built to a scale of one-eighth inch to the foot, the pictorama's installation depicts important installations ranging from the flowing gas wells in the Texas Panhandle to the holders and distribution mains at the city consumer's doorstep. Machinery necessary for producing and mixing coke-oven gas is depicted in detail.

Transparent model buildings and glass tubing pipelines, the latter partly concealed underground, enable the visitor to accurately visualize the interior workings of the more vital installations. Scale-size gathering lines move the natural gas to field stations before it is passed along to the main dual transmission lines of the pipe-line system.

The miniature pipelines cross rivers and streams representative of the more than 100 river crossings encountered on their 800-mile route from the Texas Panhandle and western Oklahoma gas fields to the Chicago area. The model pipe-line

system depicts the 24-inch and 26-inch mains of Natural Gas Pipeline Company of America, PGL&C affiliate, which transmits the Windy city's natural gas supply, delivering it at Joliet, 40 miles southwest of Chicago. A model compressor station, its buildings enclosed within transparent walls, illustrates the various structures necessary for one of these pipe-line installations.

Within the city, the model machinery and installations of a large gas-processing and manufacturing plant are shown in full detail. Transparent structures show how coke-oven gas and carbureted water gas are produced.

Supplementing the pictorama are twin rows of pictures taken within the company's plants and along the pipe-line systems showing how natural gas is mixed with manufactured gas in the proper proportions. Model underground transmission mains carry the mixed gas through a miniature distribution system which has three model holders typical of the seventeen used by PGL&C in Chicago.

The underground network of mains, with cross-connections made by smaller mains, enclose the model city in sweeping loops that reveal how the gas is carried into a city's general distribution system. The model metropolitan community is made up of residences, industrial establishments, and commercial structures.

Seven of the model units are spectator operated. In viewing one of these, the spectator, by pressing a button, sets in motion an automatic 3-stage metal heat-treating process which demonstrates the flexibility and high degree of control which industries obtain by the use of gas. In this unit, the automatic machine heat

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treats a section of a band of steel with a glass flame.

In addition to the visual models of a complete gas system, the exhibit includes appropriate murals and statuary, tracing the development of flame gas from its earliest days to its present state of general utilization. There are also four trans-lite paintings depicting man's earlier experiences with fire, and his prehistoric struggles to master the awesome flame which today is effectively harnessed.

First REA-financed Telephone Installation

THE linemen of the Fredericksburg & Wilderness Telephone Company of Chancellor, Virginia, early last month were rushing the installation of automatic central station equipment and dial instruments in preparation for the Rural Electrification Administration's celebration of the first rural telephone hook-up under the REA telephone loan program. The company, owned by T. E. Thorburn of Chancellor, now serves 170 rural subscribers in the historic Fredericksburg area. An additional 130 subscribers will be served when the modern equipment is installed.

The formal celebration took place at the Fredericksburg Agriculture Fair on September 20th when REA emulated a similar Bell system celebration in 1948 by placing a call from the first installed instrument to the President at the White House. In 1948 the occasion of the one millionth Bell-installed phone since V-J Day also was memorialized with a White House call from North Carolina. The REA event will also feature such trimmings as a parade, a Marine band, and speeches by visiting dignitaries.

Up until now all loan announcements represented "allocations" of funds to the respective companies. It was not until last month that any funds were transferred to a company, all details of the contract having been worked out. On September 12th REA officials presented Mrs. Marian C. Thorburn, secretary-treasurer of the company, with a check for \$30,323.21. Mrs. Thorburn announced that

the funds will be used against obligation incurred in obtaining the new dial equipment.

The new instruments will replace the 1908 equipment installed when the company was founded. Subscribers were enthusiastic over the new telephones and service, but some privately admitted that they will miss the news value of the old multiparty line. A. R. Pemberton, Jr., general manager of the company, reported that the new service will eliminate the 10-cent toll charge to Fredericksburg and 10 trunks to the near-by town will replace the present one-trunk line.

Texas Illinois Seeks Expansion Authority

TEXAS ILLINOIS NATURAL GAS PIPE-LINE COMPANY, of Chicago, has applied to the Federal Power Commission for authorization to construct facilities which would increase the authorized capacity of its recently approved pipe-line system from 305,000,000 cubic feet daily to a new total of 374,000,000 cubic feet.

Last June, the FPC authorized the company to construct at an approximate cost of \$117,000,000 a pipe-line system extending from Texas to Illinois with an over-all length of 1,331.5 miles to carry natural gas destined for market areas in Illinois and Indiana.

Estimated total cost of the proposed new construction is \$11,581,800 which the company plans to finance by the issuance of first mortgage bonds for 75 per cent of the required capital, the remaining 25 per cent to be raised through the sale of common stock.

The additional gas would be sold in part to some of the company's presently authorized customers, with the remainder to be available to communities along the route of its pipe-line system not now receiving natural gas.

Texas Illinois said that it has reserved 7,705,000 cubic feet of the proposed daily increase for the distributors of gas in Sullivan, Altamont, Carlyle, Beckemeyer, Salem, Lovington, Bement, Shattuck, Hoffman, Sandoval, and Junction City—all in Illinois.

PUBLIC UTILITIES FORTNIGHTLY

District of Columbia

Stiff Fines and Jail Terms Proposed for Wire Tapping

INTERCEPTION or attempting to intercept any telephone or telegraph communication by "wire tapping" in the District of Columbia would draw a jail term as long as ten years or a fine of \$10,000, or both, under provisions of a bill (S 4154) introduced by Senators Matthew M. Neely (Democrat, West Virginia)

and Harry Darby (Republican, Kansas).

The Neely-Darby Bill is the outgrowth of extensive hearings before a Senate District of Columbia subcommittee, delving into a maze of charges and counter-charges that telephone lines of various Senators were freely tapped by conflicting interests during a Senate investigation of three years ago into various war contracts of Howard Hughes, West coast aircraft builder and motion picture producer.

Louisiana

United Gets Temporary Authorization

THE United Gas Pipe Line Company, of Shreveport, has received temporary authorization from the Federal Power Commission to construct approximately 16 miles of pipeline, a compressor station, and a dehydration plant to be lo-

cated in Webster, Bossier, and Ouchita parishes, in order to augment the supply of natural gas to existing customers. The new facilities, estimated to cost \$1,813,000, will have a daily capacity of approximately 100,000,000 cubic feet. The company proposes to finance the construction out of cash in hand.

Missouri

City Ownership of Transit System Proposed

A PROPOSAL for municipal ownership of the transit system of St. Louis has been advanced by Alderman Alfred I. Harris (Democrat), who said he will introduce a measure to submit to the city's voters on November 7th.

Harris said he would call for putting a referendum question before the voters as to whether they favor purchase of the system of the Public Service Company. At the same time, he said, he would have the

voters act on a bond issue to finance the purchase. He estimated the bond issue would have to be for around \$30,000,000.

Equity value of the stock, a large portion of which is held by the National City Lines, Inc., of Chicago, as shown by the books of the company early this year, was around \$27,000,000.

The alderman said that a pending fare increase prompted his proposal, while county residents are aroused over a pending fare increase that would introduce a system of zone fares.

Nebraska

Independent L-P Gas Association Organized

ARTICLES of incorporation to form the Liquid Petroleum Association of Nebraska have been filed with the Secretary of State.

The association is a nonprofit organization, and, according to its incorporators, was formed to promote use of liquefied petroleum gas, and to improve distribution and handling of the product.

It was also stated that the association

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will "oppose monopoly and any movement within the industry designed to unduly increase prices or to preserve or create monopolistic practices in the sale or distribution of the product."

Officers of the newly formed group

are: G. J. Abramson, of Holdrege, president; F. P. Murphy, of Stuart, vice president; Howard Goble, of Sargent, second vice president; L. J. Roosman, of Hastings, secretary; and Eric Dahkert, of O'Neill, treasurer.

New York

Central Hudson Celebrates Fiftieth Anniversary

THE nearly eight hundred employees of the Central Hudson Gas & Electric Corporation, of Poughkeepsie, gathered the evening of September 22nd to reenact the days of 1900 in the Newburgh armory to celebrate the company's fiftieth anniversary of service to residents and industries of its area.

Dressed in costumes of the turn of the century, the smart set jogged to the armory in buggies and surreys drawn by high-stepping teams, while not a few adventurous young ladies and their escorts sped to the gala affair on bicycles. Risking ridicule, a few daring souls gambled

their lives in the newfangled horseless carriages.

Seated at dinner on either side of a gaily decorated and gas-lighted "street," the group sang songs of a half-century ago, staged a costume contest, heard an address by President Ernest R. Acker, and then celebrated with a general Mardi Gras.

Central Hudson dates its official start from the formation in 1900 of the Newburgh Light, Heat & Power Company. This original Central Hudson Company was the result of the union of a gas company, the Consumers Gas Company, and an electric company, the Consolidated Gas, Electric Light, Heat & Power Company.

Tennessee

Council Approves Gas System Bid

THE Harriman city council recently approved the bid of \$439,135 submitted by Bush Building Company, of Nashville, for construction of a local natural gas distributing system.

The Bush bid, the only one submitted, was about 20 per cent above an estimate prepared and evaluated as of last July by

a firm of consulting engineers retained by the city.

It was reported that the Bush firm was the only one able to procure enough pipe to proceed with line construction at this time. The bid was approved provided within eighty days a \$550,000 bond issue can be sold and East Tennessee Natural Gas Company's application to supply the city is approved by the Federal Power Commission.

Washington

WWPC Seeks Hydro Permit in Idaho

THE Washington Water Power Company has applied to the Federal Power Commission for a preliminary permit to construct a 200,000-kilowatt hy-

droelectric plant at Cabinet Gorge, on the Clark Fork river in Bonner county, Idaho. The project is estimated to cost more than \$40,000,000 and would increase the company's generating capacity to more than 400,000 kilowatts when completed.



Progress of Regulation

Interruptible and Off-peak Gas Rates Increased To Remove Discrimination

THE Illinois commission authorized a gas company to increase rates for gas sold in large volume for industrial or commercial use on an interruptible or off-peak basis. Since the reasonableness of the company's over-all utility earnings was being investigated in another proceeding, the commission did not deem it necessary to consider earnings or property value.

Evidence did not warrant the conclusion that the increase was necessary to assure a fair return on the fair value of the company's property. As a matter of fact, the company did not seek to justify the proposed rate increase on that ground but urged approval regardless of over-all return. The commission did order, however, that the increased return resulting from the proposed rate increase should be put in a special reserve to meet special nonrecurring costs of integrating a proposed new gas supply into the company's system, and thus reduce any additional expense to customers that might otherwise result from furnishing the increased gas supply.

The average rate per therm for interruptible customers was only 14 per cent of the average rate for residential customers without space heating, 22.6 per cent of that for residential customers with space heating, 30.3 per cent of that for firm industrial customers, and 21.8 per cent of that for all general customers. The average rate for off-peak customers was only 17.2 per cent of the average rate for residential customers without space heat-

ing, 27.9 per cent of that for residential customers with space heating, 37.4 per cent of that for firm industrial customers, and 26.9 per cent of that for all general customers.

The commission held that since the interruptible and off-peak customers were participating in the benefits afforded by the availability of gas service in their area, they should bear with the other customers a reasonable share of the total cost of providing that service. Under existing rates they were not bearing a reasonable share.

Consequently, existing rates for interruptible and off-peak service were unreasonably preferential and discriminatory.

The commission did say, however, that the difference in the character of the service provided each group warranted some variance between rates to interruptible and off-peak customers and the rates to general customers. Off-peak customers receive gas only during certain months of the year. Interruptible customers are subject to curtailment of service if serving them would increase the demand beyond the existing capacity of the company at any given time. These customers are, therefore, required to maintain standby facilities for conversion to other types of fuel to assure year-around operation. General customers are entitled to uninterrupted service throughout the year.

The new rates, although lower than general service rates, were found to be high enough to meet all costs of render-

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ing this special service which would not be incurred if the company did not serve such customers at all. Interruptible customers would not continue to use gas on that basis if rates were set at a level where it would be economically advantageous

to use other fuels. Therefore, these rates could not be higher than the comparable costs of alternative fuels. The proposed rates were below prevailing prices of coal or oil. *Re Peoples Gas Light & Coke Co.* (No. 37859).



War Conditions Considered by Commission in Authorizing Issue of Securities

THE New York commission authorized the New York State Electric & Gas Corporation to issue and sell \$4,000,000 par value of serial preferred stock bearing an annual dividend rate of 4.15 per cent and \$12,500,000 principal amount of first mortgage bonds bearing an interest rate of 2.8 per cent per annum, in accordance with the terms of purchase agreements with various insurance companies.

The commission found that the issuance of these securities was in the public interest and that the funds were required for proper capital purposes. The funds would be required shortly for the continuation of the company's construction program which was inaugurated after World War II.

It seemed reasonable to conclude that, bearing in mind the present unstable market conditions and with knowledge of the financial experience of the corporation's officials in recent financing matters, the proposed interest and dividend rates contained in the negotiated agreements would produce the lowest cost of money under existing circumstances. An important factor in considering the interest rate was the particular advantage resulting from the proposed negotiated sale of the bonds. The commission said:

Aside from the savings in costs that a public offering would entail, the proposed purchase agreements permit the money to be drawn down in installments—thereby eliminating the interest charges on the entire amount, which would begin to accrue, if competitive conditions prevailed, the moment the issue was sold. In this connection, Mr. Rowe [company secretary-treasurer]

pointed out that the interest savings resulting from the instalment draw-down plan would amount to about \$149,000, on the basis of a 2.8 per cent interest rate. He testified also that if the corporation were required to sell the bonds as the result of competitive bidding, it would have to realize an interest rate of 2.75 per cent, or better, in order to counterbalance the savings in interest resulting from the negotiated arrangements with the insurance companies and pay the additional costs required by a public offering.

The commission noted the possible problem of the corporation having a substantial amount of idle funds, in the event the present unsettled conditions become more serious and the Federal government restricts construction activities to bare essentials. If this unusual condition were to become an actuality after consummation of the contracts with the insurance companies, the company might be faced with the problem of investing a considerable amount of surplus funds in a manner to offset the current cost of such funds. The commission continued:

There are, of course, several possibilities—depending upon the circumstances existing at the time. Such funds could probably be invested in government securities, in which case the possible yield would only partially offset the debt service cost of the new bonds. Another possibility would be the redemption of some of the presently outstanding bonds and preferred stock. The corporation has 3 per cent and 3½ per cent bonds outstanding which are subject to redemption, as well as preferred

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stock calling for an annual dividend of 4½ per cent. If such funds were to be used for redemption purposes, the manner in which they could be used most

advantageously would, of course, have to be determined.

Re New York State Electric & Gas Corp. (Case 15006).

Commission Discusses Method of Computing Depreciation

THE Michigan commission, in passing upon a public utility company's estimate of operating expenses for rate-making purposes, revised depreciation expense. The company had used a retirement reserve method. The annual accrual for depreciation expense as so computed was dependent upon the amount of plant additions and retirements and contained a substantial variation from year to year.

As part of its normalizing procedure, the commission's staff made its depreciation estimates on the basis of estimated service lives and estimated salvage rates by classes of plant. The composite depreciation rate used was 2.72 per cent based on average depreciable plant in service.

The commission held that the company's retirement reserve, consisting of an arbitrary limit of 17 per cent on all reserves and accruing only to reach that limit, was inadequate and improper. Very short-lived accounts would have a tendency to a higher reserve ratio.

It was said to be important for rate making that the reserve be accrued currently by charges to customers and that it bear a relation to service life of the property. Thus, over that life the investment made by the security holders of the company could be fully recovered from those benefiting by the use of that property. *Re Alpena Power Co. (D-2999 50.1).*

Reorganization Plan Involving Allocation of Stock Upheld by Court

THE court of appeals affirmed an order of the district court directing enforcement of a plan for reorganization and consolidation of Long Island Lighting Company and its subsidiaries, Queens Borough Gas & Electric Company and Nassau & Suffolk Lighting Company. The consolidated corporation under the plan is to distribute common no par stock in the following proportions: to Long Island preferred stockholders 76.98 per cent, to Queens preferred stockholders 11.51 per cent, to Nassau preferred stockholders 5.8 per cent, and to Long Island common stockholders 5.71 per cent. Outstanding debts of the companies will remain unaffected.

The court at the outset overruled a contention that the Securities and Exchange Commission, which approved the plan in 83 PUR NS 465, had no jurisdiction because the operations of the companies are wholly intrastate. A sufficient answer,

said the court, was that interstate distribution of Long Island's securities brings it and its subsidiaries within the coverage of the Holding Company Act.

The decision in Halstead v. Securities and Exchange Commission (1950) 182 F2d 660, was said to be conclusive as to the power of the commission to refuse permission to a committee to solicit contributions from stockholders in opposing the plan. It did not, however, determine whether the effect of the order was such as to invalidate the hearings in the § 11 (e) proceedings, but the court found no basis for a claim of prejudice from the commission's refusal to permit solicitation of funds.

Any estimate of prospective earnings is a forecast which cannot possess mathematical certainty, said the court, in overruling a contention that developments subsequent to the commission's approval of the plan in 1949 required the proceed-

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ings to be resubmitted for further evidence.

The court said that if every slight discrepancy between estimate and actuality requires that hearings be reopened, the case would never end.

Objections that the commission had not given weight to growth factors in making its estimate of future income were also overruled. The court said that conceding that the system might be allowed to earn a larger return in an expanded plant, it did not follow that increased future earnings would inure entirely or at all to holders of present common stock.

No merit was found in a contention that the commission should have determined whether or not a recapitalization plan under state law had become effective. This plan had been undertaken while Long Island and its subsidiaries were exempted from registration under the Holding Company Act. Later the exemption had been revoked. The court said that any change in its capitalization was subject to review by the Securities and Exchange Commission and, even if effective under state law, could be disregarded by the commission in a plan filed under § 11(e) since what is "fair and equitable" is a Federal question. The commission was not required to decide the merits, under state law, of conflicting claims.

A dispute had arisen as to the possibility of a deficiency in reserves for depreciation. The New York commission had found that the companies' reserves for depreciation were inadequate on a

straight-line basis. The companies in proceedings before the Securities and Exchange Commission had stated their intention of eliminating the asserted deficiencies in their book reserves by increasing the reserves with corresponding charges to earned surplus as a step in consolidation and recapitalization. Later, they informed the commission that they no longer intended to increase the reserves but would place the amount involved in an account designated "unearned surplus" to be available for transfer to reserves for depreciation or for other charges which might be approved by appropriate regulatory authorities.

The court ruled that the commission did not have to reopen the proceedings because of this question. The commission was not required to determine what rate base the state commission would allow. No finding by the Federal commission would bind the state regulatory body and there was no impropriety in the commission's acceptance of the figure found by the state commission, without further independent inquiry, for the purpose of checking its estimate of future income.

What the future earnings of any company will be is largely guesswork, said the court, and it would not interfere with the commission's treatment of consolidated savings under the plan. The commission had shown that it made "at least a rational guess about the expectable influence of this factor." *Stockholders Committee of Long Island Lighting Co. v. Securities and Exchange Commission*, 183 F2d 45.



Elimination of Trains Restricted

THE New York commission required continued operation of certain passenger trains in view of the needs of the public. The commission said:

A railroad may, with due regard to adequate service and public necessity and convenience, readjust its passenger train operating schedules. That does not mean that it may arbitrarily eliminate trains or change schedules. The

railroad company, under the law, must always render adequate service, and in carrying out that obligation it cannot necessarily expect every individual train to operate at a profit for that train. When a railroad eliminates trains or changes its schedules, it must be prepared to justify its decisions.

Re Smucker, Trustee (Long Island Rail Road Co.) (Case 14697).

PUBLIC UTILITIES FORTNIGHTLY

Other Important Rulings

THE New York commission held, in a gas utility's certificate proceeding, that a 10-year period for amortizing the cost of converting to natural gas would be excessive and that a 7-year period should be sufficient. *Re Central Hudson Gas & E. Corp.* (Case 14475).

The supreme court of Arkansas held that the constitutional restriction on a municipality's bonded indebtedness does not prohibit an indebtedness on account of the construction of a municipal gas transmission and distribution system where the indebtedness is of a self-liquidating type. *Austin v. Manning*, 231 SW2d 101.

The New Jersey Board of Public Utility Commissioners refused to give

any consideration, in a water rate proceeding, to a finding which it had made over twenty years ago as to the company's rate base. The board explained that because of expansion in property, increased investment, and radical changes in wages and prices over two decades, the earlier finding was no longer of any value. *Re Sommerville Water Co.* (Docket No. 5092).

The Pennsylvania commission authorized railroads operating throughout the state to publish and maintain rates on alcoholic liquors, in the Official Classification so that the railroads would be able to meet motor carrier competition. The commission ruled that the new rates would not burden other traffic. *Re Boin* (*Intermediate Rate Docket No. 90*).

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Public Utilities Reports (New Series) are published in five bound volumes annually, with an Annual Digest. These Reports contain the cases preprinted in the issues of PUBLIC UTILITIES FORTNIGHTLY, as well as additional cases and digests of cases. The volumes are \$7.50 each; the Annual Digest \$6.00. *Public Utilities Reports* also will subsequently contain in full or abstract form cases referred to in the foregoing pages of "Progress of Regulation."

PUBLIC UTILITIES REPORTS

FEDERAL POWER COMMISSION

Re Mississippi River Fuel Corporation

Opinion No. 198, Docket No. G-1281
July 28, 1950

APPPLICATION by natural gas pipe-line company for certificate of public convenience and necessity to construct, lease, and operate facilities; granted in part.

Interstate commerce, § 37.1 — Scope of Natural Gas Act — Pipe-line company.

1. A corporation owning natural gas pipe lines, producing no natural gas but purchasing its requirements in one state and transporting such gas for sale directly to consumers for industrial and other uses and to distributors for resale, in other states, is a natural gas company within the meaning of the Natural Gas Act, and the interstate transportation and sale of such gas for resale is subject to the jurisdiction of the Federal Power Commission, p. 4.

Certificates of convenience and necessity, § 53.5 — Operations and facilities subject to regulation — Natural Gas Act.

2. The proposed construction, leasing, and operation of facilities which will be operated as an integral part of a natural gas company's pipe-line system and will be utilized by it for the transportation and sale of natural gas in interstate commerce directly to consumers for industrial and other uses and to utility distributors for resale, are subject to the provisions of § 7 of the Natural Gas Act, 15 USCA § 717f, relating to the grant of certificates of convenience and necessity, p. 4.

Certificates of convenience and necessity, § 85.1 — Lease and operation of facilities — Natural gas company.

3. A certificate of convenience and necessity should not ordinarily be granted to an interstate natural gas company, under § 7 of the Natural Gas Act, 15 USCA § 717f, to lease and operate, under a lease and option agreement, compressor stations financed and constructed by a company not subject to regulation, p. 5.

FEDERAL POWER COMMISSION

Certificates of convenience and necessity, § 77 — Ability to serve — Natural gas supply.

4. An applicant for a certificate of convenience and necessity authorizing the construction, extension, or acquisition of facilities for the transportation or sale of natural gas must show that it possesses a supply of natural gas adequate to meet, for a reasonable future period, those demands for firm service which it is reasonable to assume will be made upon it, p. 9.

Certificates of convenience and necessity, § 77 — Ability to serve — Established company — Natural gas supply.

5. The Commission may properly deny a certificate of convenience and necessity for construction and operation of natural gas facilities when the applicant fails to show that it possesses an adequate supply of natural gas warranting the authorization of all of the facilities proposed even though the applicant is a long established natural gas pipe-line company to which it claims, different standards with respect to gas reserves and deliverability should be applied than to new companies, p. 12.

Certificates of convenience and necessity, § 5 — Authority of Federal Power Commission — Partial grant of authority.

6. The Federal Power Commission has authority under the Natural Gas Act, in passing upon certificate applications, to authorize the whole or any part of any projected expansion by a natural gas company which, after public hearings, is found to be required by public convenience and necessity, p. 13.

Certificates of convenience and necessity, § 2 — Unauthorized construction — Natural gas facilities.

7. The construction and operation by a natural gas company of additional compressor capacity and compressor stations without authority from the Federal Power Commission constitutes a violation of the provisions of § 7 of the Natural Gas Act, 15 USCA § 717f, not exempted by § 157.14 of the Commission's General Rules and Regulations permitting certain temporary acts and operations limited to a single period of not more than sixty days without certificate authorization, p. 14.

Opinion and Order in Part Issuing a Certificate of Public Convenience and Necessity and in Part Reopening the Proceeding

By the COMMISSION: This proceeding concerns the application filed in Docket No. G-1281 by Mississippi River Fuel Corporation (Applicant) on September 19, 1949, as amended January 30, May 15, and June 16, 1950, for a certificate of public convenience and necessity pursuant to § 7 of the Natural Gas Act, 15 USCA § 717f, as amended, for authorization:

(1) Compressor Facilities—

- (a) To construct and operate 4,100 horsepower of additional compressor units in two previously authorized compressor stations as follows:

Location	Number of Units	Total Rated HP
Perryville, La.	2	2,100
West Point, La.	2	2,000
	4	4,100

- (b) To lease and operate seven new compressor stations with a total of 28,380 horsepower, the new stations to be constructed by the Stupp Broth-

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ers Bridge and Iron Company, as follows:

Location	Number of Units	Total Rated HP
Fountain Hill, La.	4	3,520
Glendale, Ark.	5	5,500
Carlisle, Ark.	4	4,400
Tuckerman, Ark.	4	3,520
Biggers, Ark.	4	4,400
Poplar Bluff, Mo.	4	2,640
Twelvemile, Mo.	4	4,400
	29	28,380

(2) *Gas Scrubbers*—To construct and operate seven 66-inch gas scrubbers, one each downstream from the discharge of each of the proposed seven new compressor stations, and two 60-inch scrubbers, to increase the capacity of the existing scrubbers located downstream from Applicant's existing Perryville No. 2 and West Point No. 2 compressor stations.

(3) *Mississippi River Crossing Facilities*—For the purpose of making additional deliveries of gas to the Laclede Gas Company in St. Louis, to construct and operate approximately 4.6 miles of 12½-inch pipe line, in a 4-line manifold crossing of the Mississippi river, extending from a point on the east side of the Mississippi river in St. Clair county, Illinois, to a point on the west side of the river in St. Louis county, Missouri, in the vicinity of Laclede Gas Company's coke plant; and to construct and operate approximately 7/10 of a mile of 24-inch pipe line to connect the east header of this new river crossing with Applicant's Alton pipe-line facilities.

(4) *Dubach-Perryville Pipe Line*—

To construct and operate approximately 40 miles of 18-inch diameter pipe line extending from a point near Dubach, Lincoln Parish, Louisiana, easterly to a point of connection with the southern terminus of Applicant's existing pipe-line system at its Perryville compressor station near Perryville, Ouachita Parish, Louisiana, for the purpose of connecting to its system additional sources of natural gas supply.

The projected facilities are designed to increase Applicant's system daily sales capacity from 266,000 to 375,000 thousand cubic feet,¹ for the purpose, according to the amended application, of meeting increased demands of Applicant's existing utility customers, to deliver natural gas for distribution in thirty communities in Arkansas and Missouri which are now without natural gas service, and to make available to its main line, direct sale customers additional volumes of natural gas.

Pursuant to due notice, public hearings were held in Washington, D. C., on May 24, 25, 26, and June 14, 15, and 16, 1950, concerning the matters involved and the issues presented by the amended application. Parties were afforded an opportunity for filing briefs, and proposed findings and conclusions, with supporting reasons. Main brief of Applicant was filed on June 30, 1950, the brief by Commission staff counsel on July 11, 1950,

¹ The presently authorized capacity of 266,000 thousand cubic feet per day is provided by facilities covered by the certificates issued to Applicant by the Commission's order dated March 1, 1944, in Docket No. G-291, 4 FPC 335; by findings and order dated August 27, 1946, in Docket No. G-583, 5 FPC 742; opinion and order dated August 28, 1946, in Docket

No. G-713, 5 FPC 206, 65 PUR NS 184; presiding examiner's initial decision and order dated November 6, 1947, which became effective on December 8, 1947, as the final decision and order of the Commission in Docket No. G-863, 6 FPC 280; and findings and order dated November 23, 1948, in Docket No. G-999.

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and Applicant's reply brief on July 19, 1950. This proceeding is now before the Commission for decision under the provisions of § 1.30 (d) (5) of the Commission's Rules of Practice and Procedure [18 CFR 1.30(d)(5)], Applicant having moved for the omission of the intermediate decision procedure pursuant to § 1.30 (c) of the said rules and all participants in the hearing having concurred in such procedure.

By order of the Commission, upon petitions therefor, the following were allowed to intervene in this proceeding: National Coal Association and United Mine Workers of America; Railway Labor Executives Association; Fuels Research Council, Inc.; United Gas Pipe Line Company; Southern Natural Gas Company; Illinois Power Company; and Laclede Gas Company. Notices of intervention were filed by the Public Service Commissions of the states of Arkansas and Missouri. At the hearings appearances, in addition to those of Applicant and Commission staff counsel, were entered by the said state Commissions and intervenors Illinois Power Company, Laclede Gas Company and Southern Natural Gas Company. The intervening coal and labor interests made no appearance nor participated at any time during the hearings; neither did intervener United Gas Pipe Line Company.

[1] Applicant, a Delaware corporation, owns, among other things, two natural gas transmission pipe lines, Line No. 1 being principally 22-inch

diameter pipe and Line No. 2 being in part 22-inch and in part 24-inch diameter pipe, extending in a northwesterly direction from a point in the state of Louisiana, known as Perryville, near the Monroe gas field, approximately 500 miles through the states of Arkansas and Missouri and into the state of Illinois. Line No. 1 was constructed by Applicant in 1929 and has been operated by it continuously since that time. Line No. 2 was completed by Applicant in 1949. Applicant produces no natural gas but purchases its requirements in the state of Louisiana and transports large quantities of natural gas so purchased through its pipe-line system out of the state of Louisiana into and through the states of Arkansas, Missouri, and into Illinois, and sells such gas directly to consumers for industrial and other uses, and to distributors for resale to consumers for domestic, commercial, and industrial uses. The interstate transportation and the sale of such gas in interstate commerce for resale are subject to the jurisdiction of the Commission and Applicant is a "natural gas company" within the meaning of the Natural Gas Act as the Commission has heretofore found in prior proceedings involving Applicant.⁸

[2] The proposed facilities for which certificate authorization is sought herein, including the facilities to be constructed and operated by Applicant and those to be leased and operated by it, will be operated as an integral part of Applicant's natural gas transmission pipe-line system and will

⁸ In Re Mississippi River Fuel Corp. Docket No. G-291, order dated March 1, 1944, 4 FPC 535, and other decisions cited in Note 1, *sopra*; see also opinion and order dated May 31, 1940, Re Mississippi River Fuel Corp. Docket No.

G-150, 2 FPC 170, 34 PUR NS 8; and opinion and order dated November 9, 1945, Re Mississippi River Fuel Corp. Docket No. G-462, 4 FPC 340, 63 PUR NS 89.

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be utilized by it for the transportation and sale of natural gas in interstate commerce directly to consumers for industrial and other uses, and to utility distributors for resale for domestic, commercial, and industrial uses. Accordingly, such proposed construction, leasing, and operation of the facilities covered by the amended application herein are subject to the provisions of § 7 of the Natural Gas Act, as amended.

The cost of the facilities covered by the amended application, as estimated by Applicant upon the basis of its recent construction experience, appears reasonable. Such estimated costs are summarized below:

Compressor Facilities

28,380 horsepower in seven new stations to be constructed by Stupp Brothers Bridge and Iron Company	\$5,392,200
4,100 additional horsepower to be constructed by Applicant in two existing stations	779,000

Gas Scrubbers

<i>Mississippi River Crossing</i>	351,000
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Dubach-Perryville Pipe Line

40 miles of 18-inch pipe line and regulating and metering facilities	610,440
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	1,754,555
	<u>\$8,887,195</u>

Total of additional facilities to be leased from Stupp Brothers Bridge and Iron Company	\$5,392,200
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Total of additional facilities to be owned by Applicant	3,494,995
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Total estimated cost	<u>\$8,887,195</u>
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Additional system sales capacity of approximately 109,000 thousand cubic feet per day is projected by means of the proposed facilities, which are designed to increase the nominal daily

delivery capacity of Applicant's system from 266,000 thousand cubic feet, heretofore authorized, to approximately 375,000 thousand cubic feet. On assumed peak day sales of 375,000 thousand cubic feet, the record shows that Applicant's gas supply requirements will approximate 395,000 thousand cubic feet, including estimated fuel requirements of 20,000 thousand cubic feet. The design of the additional facilities appears reasonably adequate for increasing Applicant's system sales capacity to 375,000 thousand cubic feet per day. The record indicates that if its system were augmented as projected, it would be capable, by utilizing line pack, lower winter flowing temperatures, and a reasonable overload of compressor units, of delivering approximately 400,000 thousand cubic feet per day for periods of a few days.

[3] Of the 32,480 additional compressor station horsepower covered by the amended application, 28,380 horsepower are to be installed in seven new compressor stations, at an estimated construction cost of \$5,392,200. These stations are proposed to be financed and constructed by the Stupp Brothers Bridge and Iron Company and leased to Applicant for a primary term of twenty-eight years, with Applicant having an option to extend the term of the lease for ten years at a rental to be agreed upon mutually by the parties. An option is also given to the Applicant to purchase the stations at stated amounts after the first five years of operation.

The evidence shows that under a letter agreement between Applicant and Stupp Brothers, dated September 19, 1949, as amended April 13,

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1950, it is contemplated that Stupp Brothers, an unaffiliated concern, will finance and construct the seven new stations, and upon their completion, individual indentures of lease covering each station will be entered into providing for the payment of certain fixed rentals "per \$1,000,000 contract price," ranging from \$63,000 per annum during the first 5-year period, to \$42,000 per annum during the last eight years, for an estimated aggregate rental exceeding \$8,000,000 in twenty-eight years. Applicant's president testified that the "contract price" is the actual cost of facilities built at prices to be determined by competitive bids, plus 5 per cent thereof, allegedly to cover Stupp Brothers' overhead; in other words, a fee to Stupp of over \$250,000, which is proposed to be added to the "contract price" on which Applicant proposes to pay rentals possibly twenty-eight to thirty-eight years.

The record shows that the stations proposed to be leased are to be constructed in accordance with Applicant's plans and specifications, that all subcontractors are to be approved by Applicant, that it is to have complete supervision of the design of said compressor stations and all equipment and of the purchase of material and equipment, and the full right of supervision and inspection of the construction work. Also, Applicant is to approve all disbursements made by Stupp Brothers in connection with the construction of the seven stations. Duplicate sets of records are to be maintained with respect to such construction, one set to be in the custody of Stupp Brothers and the other in the custody of Applicant. It appears from

the record that under the leasing arrangement covering the seven stations, Applicant will, as a practical matter, do about everything that it would do if it were to construct the stations, other than their financing. In substance, the financing of the stations appears to be the principal function that Stupp Brothers would perform in this instance, for a fee expected to exceed \$250,000. Clearly, such fee does not appear warranted upon the evidence before us in this case.

Stupp Brothers, the proposed lessor of the seven new compressor stations, *in conjunction with Applicant*, the proposed lessee, already has constructed two (Glendale and Biggers) of the seven stations in question, and at the time the hearings were concluded on June 16, 1950, was in the process of constructing another (Twelvemile) of these stations. The proposed lessor is not before this Commission and may not be subject to the Commission's jurisdiction so long as such facilities are not to be operated by it for the transportation or sale of natural gas in interstate commerce for resale for ultimate public consumption. Irrespective of that question, it is clear here that substantial facilities proposed to be leased and operated by Applicant as integral parts of its natural gas pipe-line system, subject to the jurisdiction of this Commission, have been constructed without any opportunity being afforded the Commission to scrutinize the project prior to such actual construction, contrary to the intent and purpose of the Natural Gas Act. They may not, of course, be used for the transportation and sale of natural gas in interstate commerce without this

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Commission's authority, and such construction is at great risk to the owner without prior Commission approval. No justification is apparent for the Applicant's embarking on the program in collaboration with the owner in disregard of this Commission.

The leasing arrangement proposed by Applicant here, from the viewpoint of this individual case or of a pattern for natural gas companies which are subject to the Commission's regulatory authority under the Natural Gas Act, presents novel features which may not be in the public interest. The leasing of the seven new compressor stations here represents an arrangement, in effect, for financing the facilities in a manner equivalent to the issuance of 100 per cent debt securities. The lease rentals represent a binding fixed charge upon Applicant of higher priority than interest on its first mortgage bonds. In this case the record shows that no necessity exists for Applicant resorting to the proposed leasing arrangement, since the evidence shows that Applicant could readily finance the construction of the seven new compressor stations, if it desired to do so.

If the leasing of the seven new compressor stations should be approved, we believe that the arrangement would in the future be the source of grave accounting, rate making, and other questions involving the protection of the public interest, particularly since the leased facilities apparently are not to be owned by a "natural gas company" subject to the Commission's jurisdiction under the Natural Gas Act. For example, if either party to the lease arrangement should default, there would naturally arise questions of the rights of the parties. Lessor

would own the equipment originally installed in the station while lessee would have title to additions and replacement parts. Rate base questions probably would occur also, although in the instant proceeding the proposed lessee has indicated that the leased facilities would not be claimed as rate base items. It is conceivable, however, that at a subsequent time different management might claim the leased facilities as property used and useful in the public service and includable in the rate base. Ownership by Applicant of these new stations should obviate occurrences of such problems.

In the circumstances of this case, the record does not warrant, in our opinion, finding that the proposed leasing of the seven new compressor stations would be in the public interest or is required by public convenience and necessity. We do not consider that the leasing of natural gas transmission pipe-line facilities, to be owned by lessors that are not natural gas companies and are not subject to regulation in the public interest under the Natural Gas Act, would serve the public interest under the circumstances here presented.

Only a showing of exceptional circumstances and compelling public necessity should be considered as a justification for granting a certificate authorization to a "natural gas company" to lease and operate newly or to be constructed natural gas pipe-line facilities. The showing here fails to warrant an exception. Accordingly, the reopening of this proceeding as hereinafter ordered will afford Applicant an opportunity to amend its application and seek authority to acquire or construct, finance, and operate the

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proposed seven compressor stations, in lieu of leasing them.

As distinguished from the facilities proposed to be leased, the cost of the other facilities covered by the amended application, namely, the additional 4,100 compressor station horsepower, gas scrubbers, Mississippi river crossing facilities, and the Dubach-Perryville pipe line, is estimated at \$3,494,995. The evidence shows that the 4,100 additional horsepower (2,100 and 2,000 at Applicant's Perryville No. 2 and West Point No. 2 compressor stations, respectively) were installed and placed in operation by Applicant during 1949, at a cost of about \$779,000; the remaining unconstructed facilities amount to approximately \$2,715,995. The evidence shows that Applicant has sufficient funds on hand for financing such construction. Applicant has a comparatively low debt ratio to total capitalization and, according to the evidence, is in a position to raise additional funds by either equity or debt financing should it have need therefor.⁸

Upon the basis of Applicant's estimated revenues and expenses, the construction and operation of the projected facilities appear to be economically feasible assuming that adequate gas supplies were available for undertaking the expansion of Applicant's system to a daily sales capacity of 375,000 thousand cubic feet. Its revenue estimates, so far as estimated sales subject to Commission jurisdiction, were based upon the rates contained in Applicant's FPC gas tariff currently

on file with the Commission. Applicant has not proposed, as a part of the proceeding herein, any change in its filed tariff in connection with the proposed facilities covered by the amended application.

By means of the projected facilities Applicant proposes to increase its system sales capacity by approximately 109,000 thousand cubic feet per day. The record discloses there unquestionably exists a public demand and market for the increased volumes of natural gas that the projected facilities would be capable of transporting and delivering to Applicant's customers and markets.

Considerable data were presented by Applicant regarding the estimated peak day and annual gas requirements of all classes of customers, including estimates for the years 1950 through 1955. These estimates were based principally on information furnished by its customers; that is particularly true with respect to the utility customers purchasing gas from Applicant for resale for domestic, commercial, and other uses. From the evidence presented, there is summarized in the tabulation appearing on the page next following [omitted herein] Applicant's actual requirements in 1949 and its estimated requirements in 1950 and 1951, both on a peak day and annual basis.

Examination of the summary tabulation of the estimated requirements of Applicant's customers readily discloses very substantial increased demands for natural gas. Applicant's

⁸ Applicant on May 2, 1950, completed the sale of 245,708 shares of common stock at \$34 a share, with proceeds amounting approximately to \$8,350,000 before deduction of expenses of the sale of about \$80,000. The funds from

this financing were utilized principally to retire on May 2, 1950, Applicant's \$7,250,000 bank loan from Guaranty Trust Company of New York.

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utility customers, particularly the Laclede Gas Company, which serves the county and city of St. Louis and which in 1949 converted to a straight natural gas service, have been experiencing rapidly increasing demands, particularly for house-heating service. The record discloses that during the current year thousands of gas house-heating customers are being attached by Applicant's utility customers, particularly by Laclede Gas Company. It appears that the attachment of such customers is being made, in part, upon the basis of assurances made by Applicant and Laclede that substantial additional volumes of natural gas will be available, including the additional 109,000 thousand cubic feet per day contemplated by the projected facilities in this proceeding.

Many gas consumers apparently have been invited or led to believe that natural gas would be available, warranting the installation of additional and new gas appliances. This occurred before this Commission had an opportunity to pass upon the soundness of Applicant's projected expansion. It will be assumed that in the light of our action herein, Applicant having failed to make a showing warranting the issuance at this time of a certificate covering all of the projected facilities, appropriate action will be taken promptly by Applicant and its customers to prevent the attachment of consumer loads exceeding Applicant's system capacity.

[4] A serious question confronts us in this case concerning the sufficiency of supply of natural gas to render the service which Applicant proposes by means of its expanded facilities. Upon consideration of the record herein, we are of the opinion

that Applicant does not now possess a supply of natural gas reasonably adequate to render the service proposed. In previous decisions in gas certificate proceedings under § 7 of the Natural Gas Act we have held that applicants who contend that public convenience and necessity require the construction, extension, or acquisition of facilities for the transportation or sale of natural gas, must show that they possess a supply of natural gas adequate to meet for a reasonable future period those demands for firm service which it is reasonable to assume will be made upon them.

The importance of requiring a showing of a reasonably adequate supply of gas has been stressed by this Commission in earlier gas certificate proceedings. Its importance is evident, if consideration is given to the substantial capital expenditures under way or planned by Applicant's utility customers, not to mention the expenditures by thousands of gas consumers for appliances in expectation of gas service. Consumers, investors, and the public generally rely upon this Commission, in issuing certificates of public convenience and necessity to natural gas companies, to issue certificates only to applicants clearly showing ability to perform the services proposed. Section 7 of the Natural Gas Act requires such finding by this Commission in certificate proceedings as a condition precedent to the issuance of a certificate.

The evidence shows that Applicant heretofore has obtained its gas supply from three primary sources, namely, United Gas Pipe Line Company, Arkansas Louisiana Gas Company, and the following in the Mon-

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roe Field: United Carbon Company, Southern Carbon Company, Interstate Natural Gas Company, Inc., and Hope Producing Company. Gas delivered by United Gas is produced from the Carthage gas field in northeast Texas and other fields, and gas delivered by Arkansas Louisiana is produced from various northern Louisiana gas fields other than the Monroe Field. All gas is delivered at or near Applicant's Perryville compressor station.

Applicant's contracts with its Monroe Field suppliers expire on February 2, 1952; its 5-year contract with Arkansas Louisiana Gas Company runs to March 26, 1953, and from year to year thereafter unless cancelled by either party; the United Gas Pipe Line Company agreement expires on November 1, 1966. The evidence shows that no extensions of any of these agreements have been consummated. On the concluding day of the hearings herein, Applicant's President Marbury testified that his company was actively negotiating with United Gas Pipe Line Company for a contract contemplating 450,000 thousand cubic feet per day being supplied to Applicant by United, an increase of 255,000 thousand cubic feet per day above the 195,000 thousand cubic feet per day currently being supplied. Witness Marbury testified that Applicant was also negotiating with other prospective suppliers for the purchase of additional gas.

The record discloses that in a report as of March 15, 1950, Mr. Ralph E. Davis, a consulting engineer, reviewed Applicant's gas supply available from the Monroe suppliers, Arkansas Louisiana Gas and United Gas. He re-

ported that the annual deliveries under these commitments had aggregated 69,335,221 thousand cubic feet in 1948, and 75,619,188 thousand cubic feet in 1949, and pointed out that Applicant's plans involve gas requirements in the near future up to 115 billion cubic feet per year, about 50 per cent in excess of Applicant's 1949 requirements. Applicant herein estimated its annual gas requirements will amount to 115.85 billion cubic feet by 1951, and on a peak day, 395 million cubic feet.

With reference to Applicant's gas supply from Monroe Field, Mr. Davis in part stated:

"The contracts with Monroe producers which expire in 1952 may or may not be renewed. When considered in relation to an anticipated requirement of Mississippi River Fuel Corporation soon to approach 115 billion cubic feet per year, *the Monroe Field as a source of supply can be regarded as important for only a few years.*" (Italics supplied); and concluded, with respect to Applicant's over-all supply situation, as follows:

"It is my opinion that Mississippi River Fuel Corporation *will be able to obtain from sources now covered by contract, in competition with others, or in part, from other sources, a gas supply sufficient to meet its presently anticipated requirements of 115 billion cubic feet per year for a period of at least twenty years.*" (Italics supplied.)

The conclusion, in effect, is that Applicant did not as of March 15, 1950, have "covered by contract" a gas supply sufficient to meet its anticipated requirements of 115 billion cubic feet per year.

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The record here shows that between the time of the March 15, 1950, Davis report and the conclusion of the hearings herein on June 16, 1950, Applicant entered into ten contracts for the purchase of gas from the Dubach area and the Lisbon, Unionville, D'Arbonne, and Ruston gas fields in north Louisiana, which Applicant proposes to connect to its system by means of its projected 40-mile Dubach-Perryville pipe line. These contracts, sometimes referred to as the "Dubach area" contracts, are for primary terms of twenty years, from not later than October 1, 1950, and provide for daily contract quantities aggregating 75,713 thousand cubic feet, (at 16.7 p.s.i.) at the following prices per thousand cubic feet, for the first four 2-year periods, respectively, 11, 11½, 12, and 12½ cents, and for the following four 3-year periods, respectively, 13, 13½, 14, and 14½, exclusive of a ¼ of a cent charge if the sellers dehydrate the gas. Applicant is obligated to take or pay for 75 per cent of the stated contract quantities, subject to force majeure; however, physical inability of the sellers' properties to deliver the minimum contract quantities will cause these quantities to be reduced proportionately.

Applicant presented gas reserve and deliverability estimates pertaining to the new Dubach area gas purchase contracts, through its expert witness Edwin P. Ogier, who estimated that the Dubach reserves available to Applicant, as of October 1, 1950, would approximate 206,032,000 thousand cubic feet (14.9 p.s.i.). From the evidence presented there is summarized in the tabulation appearing below, the estimated peak-day deliveries anticipated by Applicant from its gas

suppliers during the years 1951 through 1970. These estimated peak-day deliveries, for the most part, are not supported in the record here with

Mississippi River Fuel Corporation
Estimated Peak Day Deliveries
From Suppliers, 1951-1970
(MM cu. ft. at 14.9 p.s.i.)

Year	United Gas Pipe Line Co.	Ark. La. Gas Co.	Dubach Area*	Monroe or New Source
1951 ..	195	12.5	78.5	109
52 ..	195	12.5	64	123.5**
53 ..	195	12.5***	64	123.5
54 ..	195	12.5	60	127.5
55 ..	195	12.5	53	134.5
56 ..	195	12.5	42	145.5
57 ..	195	12.5	35	152.5
58 ..	195	12.5	29	158.5
59 ..	195	12.5	25	162.5
60 ..	195	12.5	21	166.5
61 ..	195	12.5	19	168.5
62 ..	195	12.5	16	171.5
63 ..	195	12.5	15	172.5
64 ..	195	12.5	13	174.5
65 ..	195	12.5	12	175.5
66 ..	195****	12.5	11	176.5
67 ..	195	12.5	10	177.5
68 ..	195	12.5	9	178.5
69 ..	195	12.5	8	179.5
70 ..	195	12.5	7	180.5

* The daily volumes shown in the "Dubach Area" column give effect to the daily deliverability estimates of witness Ogier before adjustment to exclude reserves not under contract to Applicant, which he testified would, on an average, effect about a 20 per cent reduction.

** Monroe contracts—Expire February 2, 1952.

*** Ark. La. Gas Co. contract—Five-year primary term expires March 26, 1953; thereafter, on a year-to-year basis.

**** U.G.P.L. Co. contract—Expires November 1, 1966.

either gas reserve or deliverability estimates. That is so with the exception of the estimates shown in the column headed "Dubach Area," but these estimates, as noted, are overstated by about 20 per cent on an average basis. Those in the "Monroe or New Source" column, beginning in about the year 1952, are "balancing" figures and represent volumes of gas

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which, according to the record herein, Applicant anticipates it will need to contract for in the future. The deficiencies in supply there indicated are substantial, beginning in 1952 and continuing through the later years.

So far as gas contractual commitments are concerned, Applicant will need, according to its own estimates, to contract for additional gas supply deliveries, beginning in 1952, of not less than 123,500 thousand cubic feet per day and, by 1960, of not less than 166,500 thousand cubic feet per day, and for increasing volumes in later years, on the assumption that Applicant's system capacity should remain at 375,000 thousand cubic feet daily sales capacity. Of course, it should not be assumed that because its gas purchase contracts in Monroe expire in February, 1952, Applicant will not have any gas available from that field after that date, if consideration is given to the provisions of § 7(b) of the Natural Gas Act. In this connection, however, it is clear from the evidence that Monroe Field cannot be regarded important as a source of supply for Applicant for more than a few years, since, as is generally well known, most of the estimated recoverable gas reserves in that field have already been produced and production there is declining.

[5] Applicant contends that it has heretofore met the needs of its customers and will be able to meet their future requirements "from supplies presently held and which unquestionably it can obtain." However, it admits that it has shown only "a supply of gas necessary to meet the immediate needs of its customers." The evidence presented warrants the conclusion that

Applicant will have available a reasonably adequate supply for meeting the anticipated requirements of its customers during this next winter season and, possibly, during the 1951-1952 winter season. Beyond that time the evidence fails to show that Applicant possesses an adequate supply of natural gas warranting the authorization at this time of all of the projected facilities proposed in this proceeding.

There is basis in the record here that would, in the absence of unusual circumstances, warrant an outright denial of the amended application. Applicant contends that since it is a long established natural gas pipe-line company, different standards with respect to gas reserves and deliverability should be applied to it than to new companies; and that the Commission cannot, because Applicant may be unable to show a complete supply picture in terms of dedicated acreage or reserves for twenty years hence, turn down its application. We disagree with Applicant's interpretation of the law in this respect.

It is clearly evident that Applicant has not made a showing warranting authorization at this time of all of the projected facilities, which are designed to give Applicant a sales capacity of 375,000 thousand cubic feet per day. Also, it appears clear that, prior to our opportunity to pass upon Applicant's projected expansion, large additional domestic space-heating loads were attached in the markets which Applicant has been supplying gas, in the anticipation of favorable action by us approving the expansion and irrespective of the possibility that Applicant might fail, as it has, to make an adequate showing of gas reserves. The result

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has been to create a situation calling for whatever action possible to provide gas for consumers that have been permitted to attach and install appliances predicated upon unwarranted assurances by Applicant and others that increased volumes of gas would be available during the forthcoming 1950-1951 winter season and later years.

[6] Despite these derelictions, we are desirous of taking all possible action in behalf of the gas consumers served by Applicant that is reasonable in the circumstances and consistent with sound administration of our responsibilities under the Natural Gas Act. Under the act, authority is given to us in passing upon certificate applications to authorize "the whole or any part" of any projected expansion by a natural gas company which, after public hearings, is found to be required by public convenience and necessity.

In the light of the public demand and need for natural gas before us in this case, for which Applicant and its utility customers have an obligation and responsibility to serve, we are of the opinion that, though the record here clearly does not warrant the granting of the whole of the amended application before us, good grounds exist for granting part of the application. In the circumstances presented, we find that public convenience and necessity here require (1) the issuance of a certificate, as hereinafter ordered, authorizing part of the facilities covered by the amended application, and (2) with reference to the facilities not authorized, the reopening of this proceeding to afford Applicant further opportunity to submit, at further hearings in this proceeding, evidence of, among other matters, additional firm

commitments for, and an adequate showing of, an additional supply of natural gas sufficient to warrant the issuance of a certificate authorizing Applicant to acquire or construct and operate facilities capable of delivering 375,000 thousand cubic feet per day to its customers and markets.

The certificate hereinafter issued will, among other things, permit Applicant to construct and place in operation later this year the 40-mile Dubach-Perryville 18-inch diameter pipe line and thereby connect to its system the additional gas reserves dedicated by the ten new gas purchase contracts presented at the hearings in this proceeding, and should permit Applicant to commence purchasing a substantial portion of the volumes of gas covered by those contracts, pending further consideration and possible authorization later of facilities providing Applicant with 375,000 thousand cubic feet daily sales capacity. Also, the certificate issued here will permit Applicant to commence immediate installation of its proposed Mississippi river crossing facilities, to connect its system with the new facilities now under construction by Laclede Gas Company in St. Louis, thereby facilitating deliveries of gas at a location desired by that company in connection with the reinforcement and enlargement of its facilities for better serving St. Louis consumers.

The certificate herein issued authorizes Applicant to continue operation of the 4,100 horsepower of additional compressor units which, without authorization, Applicant in 1949 installed in its previously authorized Perryville No. 2 and West Point No. 2 compressor stations, and placed in

FEDERAL POWER COMMISSION

operation at or near the end of 1949. With this additional horsepower installed, 2,100 at Perryville and 2,000 at West Point, Applicant during the past 1949-1950 winter season made peak-day deliveries of approximately 300,000 thousand cubic feet to its customers. With these facilities and the additional facilities hereinafter authorized, Applicant will have sufficient capacity to deliver to its customers up to 300,000 thousand cubic feet per day and possibly in excess thereof. By re-opening this proceeding as hereinafter provided, Applicant is being afforded an opportunity to submit the necessary additional proof to support its entire projected expansion as soon as it considers it is able and desires to go forward with the presentation of further evidence upon the pertinent issues. In the intervening period before the forthcoming heating season, Applicant's customers will have an opportunity to provide appropriate peak-shaving facilities for meeting winter loads, to the extent that curtailment of interruptible and firm industrial customers might be inadequate for protecting essential domestic and commercial services. Furthermore, it appears desirable that Applicant given consideration to the reimposition of Emergency Service Rules and Regulations, such as were in effect from April 1, 1947, until May 1, 1949, in order that an equitable distribution of available gas may be had in the event curtailment of service becomes necessary.

If further showing by the Applicant on the matters herein required is satisfactory to this Commission, it is then our intention to issue forthwith a certificate of public convenience and necessity to the Mississippi River Fuel

Corporation to authorize construction and operation of additional facilities providing a total sales capacity of 375,000 thousand cubic feet per day.

[7] Another serious question raised in this proceeding relates to the evidence showing that Applicant constructed and placed in operation, without the required authorization from this Commission, 4,100 horsepower additional compressor capacity at its Perryville No. 2 and West Point No. 2 compressor stations. One half of the 2,000 additional horsepower installed without authorization in Applicant's West Point Compressor Station No. 2 was formerly in its Neelyville compressor station, from which it was removed without authorization and installed in the said West Point station. It appears from the record here that these acts by Applicant are violations of provisions of § 7 of the Natural Gas Act, as amended, and in the circumstances disclosed by the record, they would appear to constitute willful violations within the meaning of § 21(a) of that act, 15 USCA § 717t(a).

Applicant, in its reply brief filed on July 19, 1950, takes a contrary view and asserts that its installation and operation of these facilities were initiated and have been carried forward under the provisions of § 157.14 of the Commission's General Rules and Regulations [18 CFR 157.14]. This section permits, without certificate authorization, certain temporary acts and operations limited to a single period of not more than sixty days. The evidence of the unauthorized construction and the unauthorized operation of the compressor facilities in question was, in part, developed at the hearing sessions on June 14 and 16, 1950,

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through cross-examination of Applicant's chief engineer and its president. From the record we do not consider that Applicant's acts here in question were undertaken under, or that they properly fall within, the scope of said § 157.14. The contentions in this regard by Applicant, in our view, are not well founded.

In the light of the evidence of the apparent violations of the Natural Gas Act before us, we consider, in the circumstances, that it is our duty under that act to transmit, in accordance with § 20(a) thereof, 15 USCA § 717s(a), to the Attorney General of the United States the evidence of these violations for his consideration whether, in his discretion, criminal proceedings should be instituted with respect to the violations. Appropriate action will be taken accordingly.

Upon consideration of the amended application, the record thereon, and the briefs and proposed findings and conclusions submitted herein, we hereby reject such proposed findings and conclusions except in so far as they are incorporated in our findings and action herein. Upon consideration of the foregoing, and taking notice of the Commission's opinions, findings, and orders heretofore entered in proceedings involving the Applicant, the Commission further finds:

(1) It is appropriate and necessary for carrying out the provisions of the Natural Gas Act, as amended, that Applicant, Mississippi River Fuel Corporation, be issued forthwith a certificate of public convenience and necessity authorizing, as hereinafter

ordered and provided, the construction and operation by Applicant of a part of the facilities covered by its amended application, and also the continued operation of such facilities covered by the application as Applicant already has constructed and placed in operation without required authorization from this Commission.

(2) Applicant is able and willing properly to do the acts and to perform the service hereinafter authorized, and to conform to the provisions of the Natural Gas Act, as amended, and the requirements, rules, and regulations of the Commission thereunder.

(3) The construction and operation of the hereinafter authorized facilities, and the continued operation of the facilities so authorized, are required by public convenience and necessity and a certificate therefor should be issued as hereinafter ordered and conditioned.⁴

(4) The conditions hereinafter ordered to be attached to the certificate issued herein are reasonable and required by public convenience and necessity.

(5) The proposed leasing and operation of the proposed seven new compressor stations hereinbefore described are not required by public convenience and necessity and a certificate therefor should not be issued for the reasons hereinbefore stated.

(6) It is appropriate for carrying out the provisions of the Natural Gas Act, as amended, that the proceeding herein be reopened, as hereinafter ordered, to afford Applicant further opportunity to submit, at the further

⁴ The certificate hereinafter issued does not cover or grant authorization for the construction or operation of any of the gas scrubbers hereinbefore referred to and described in the

paragraph first numbered (2), as gas scrubbers are auxiliary installations within the meaning of § 2.55(a) of the Commission's General Rules and Regulations [18 CFR 2.55(a)].

FEDERAL POWER COMMISSION

hearings, additional evidence in support of the issuance of a certificate authorizing Applicant to construct or acquire and operate sufficient addi-

tional facilities for providing Applicant with a system sales capacity of 375,000 thousand cubic feet per day.

UNITED STATES DISTRICT COURT, D. MASSACHUSETTS

Re Eastern Gas & Fuel Associates

Civ. A. No. 50-168
90 F Supp 955
June 22, 1950

PROCEEDING by Securities and Exchange Commission to secure approval of plan of recapitalization filed by a holding company; plan approved.

Appeal and review, § 28.9 — Decision by Securities and Exchange Commission — Recapitalization proceeding — Valuation.

1. The method of valuation of claims of stockholders in a recapitalization proceeding under the Holding Company Act, although to be made by the Commission without participation by a court, is reviewable by the courts, and when an improper method of valuation is used by the Commission, the courts may set aside such a valuation, p. 17.

Corporations, § 22 — Recapitalization of holding company — Rights of preferred stockholders — Earnings — Arrearages.

2. The Commission, in valuing the earnings of preferred stock for the purpose of allocating securities in a recapitalization under the holding company, is not required to value such rights only in the light of the surrender of the preferred stock dividend, but the Commission properly considers the right of the preferred stock to receive back dividends when and if earned, p. 18.

Corporations, § 22 — Recapitalization plan — Allocation of securities — Valuation of common stock.

3. Allocation of some value to common stock for participation in a recapitalization plan under the Holding Company Act is not erroneous, on the ground that common stock could not expect to receive dividends for a prohibitively long period, where the common stock has a fixed and definite value when considered in the light of the company's past operations and the known condition of its subsidiaries, p. 18.

Appeal and review, § 28.9 — Decision by Securities and Exchange Commission — Conclusiveness.

4. The court, in reviewing findings by the Securities and Exchange Commission on the question of participation by preferred and common stockholders in a recapitalization proceeding under the Holding Company Act,

RE EASTERN GAS & FUEL ASSOCIATES

licant
5,000
does not hear the case de novo but ascertains whether the Commission's disposition is supported by the evidence presented, p. 18.

APPEARANCES: John J. Burns and John F. Rich, both of Boston, Burns, Blake & Rich, Harold B. Dondis, Boston, of counsel, for F. C. Dumaine, Jr., and Pierrepont B. Foster, individually and as a committee for the 6 per cent preferred shares; James S. Eastham and John A. Gage, Charles A. Coolidge and Peter F. Coogan, all of Boston, Ropes, Gray, Best, Coolidge & Rugg, Boston, of counsel, for Eastern Gas and Fuel Associates; Frank B. Ingersoll, Edmund S. Ruffin, Jr., Carleton M. Crick, Edward H. Schoyer, all of Pittsburgh, Smith, Buchanan & Ingersoll, Pittsburgh, of counsel, for Koppers Company, Inc.; Harry G. Slater, Chief Counsel, Division of Public Utilities, Sidney Shemel and Joseph B. Levin, all of Washington, D. C., for Securities and Exchange Commission; Claude B. Cross, Boston, for Charles Howard Bates and Jane L. Scattergood, holders of 6 per cent preferred stock.

SWEENEY, Chief Judge:

[1] This action was initiated by the Securities and Exchange Commission by filing an application for the court's approval of a plan of recapitalization which had been filed with it by Eastern Gas and Fuel Associates (which will hereinafter be referred to as Eastern), under § 11(e) of the Public Utility Holding Company Act of 1935, 15 USCA § 79k(e). At the time Eastern filed its plan of recapitalization with the Commission it had, in addition to a 4½ per cent prior preferred stock with which we are not presently concerned, a 6 per cent pre-

ferred stock and a common stock outstanding. Within these two classes of stock there existed an inequitable distribution of voting power and a plan was needed to correct it. This was to be accomplished by eliminating the two classes of stock referred to, and substituting therefor a single class of new common stock. After extensive hearings the Securities and Exchange Commission reached the conclusion that 87 per cent of the new common stock should be allocated to the holders of the 6 per cent preferred stock, and the remainder to the holders of the present common stock. After this conclusion was reached Eastern amended its plan so as to conform to it. It is with the percentage distribution of the new stock that both the 6 per cent preferred stock committee and the common stock group are dissatisfied. Koppers Company, Inc., which represents the common stock group, claims that it should be given 56 per cent of the new common stock, whereas the 6 per cent preferred holders feel that they should be given all but a token of the new common stock. The 6 per cent preferred holders' group contends that the Commission used an improper method of valuation and that, as a result, the plan is not fair and equitable to its group. Conceding that the valuation must be by the Commission without participation by the court, nevertheless the method of valuation is reviewable by the courts, see Ecker v. Western P. R. Corp. (1943) 318 US 448, 87 L ed 892, 63 S Ct 692, or, stated another way, when an improper method of

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valuation is used by the Commission the courts may set aside such a valuation. However, I am not satisfied that the Commission's method of valuation was an improper one. See *Lahti v. New England Power Asso.* (1947) 69 PUR NS 436, 160 F2d 845, 853.

[2, 3] There can be little doubt that the plan is necessary within the meaning of the act to accomplish the desired end. Indeed, most of counsel's argument has not had to do with the necessity for the plan but has been directed to the question of the fairness of it. The Commission has filed with its application a copy of its findings of fact and opinion. The case has been well briefed on all sides, and there would be little gained by this court setting forth the history of the proceeding in extended form. Koppers' main objection to the approval of the plan is directed to what it terms an unfair allocation of 87 per cent of the stock to the preferred stockholders, and in support of this objection urges that the Commission overvalued the earnings of the preferred stock. Koppers urges that the \$11.63 earnings determined by the Commission for the preferred stock were much too high, and that it should be valued only in the light of its surrender of the \$6 preference dividend. This position is untenable. The Commission properly considered the right of the preferred stock to receive back dividends to the extent of \$35.50 per share, when and if earned. The court is satisfied that the Commission committed no error in establishing the earning value of the preferred stock. The preferred stockholders' committee, seeking all but a token of the new com-

mon stock, attacks the Commission's findings not only on the basis of having used an improper method of valuation by giving consideration to earnings as well as to dividends, but also on the ground that, since the common stock could not expect to receive dividends for a prohibitively long period, its value was, therefore, only nominal. I cannot agree with such a contention. While it is true that there were arrearages on the preferred stock which, in addition to the current \$6 dividend must be earned prior to the payment of dividends on the common stock, nevertheless the common stock had a fixed and definite value when considered in the light of Eastern's past operations and the known condition of its subsidiaries, particularly The Virginian Corporation.

[4] The Commission's findings are supported by substantial evidence and its conclusion that the plan is fair and equitable is supported by these findings. Had this court heard this case in its original presentation it might have reached a slightly different result in percentages. However, it is not our duty to hear this case *de novo* but to ascertain if the administrative body's disposition was supported by the evidence presented to it. On this question I am satisfied that no error of law was made by the Commission, nor were its rulings or findings dictated by caprice or arbitrariness.

The plan is approved as fair and equitable and appropriate to effectuate the provisions of § 11 of the act, 15 USCA § 79k.

An order may be prepared to carry out the terms of the plan.

MONTANA PUBLIC SERVICE COMMISSION

Re Montana Dakota Utilities Company

Docket No. 3793, Order No. 2148
April 19, 1950

I NVESTIGATION of gas company's refusal to accept applications for new space heating; space-heating service ordered.

Service, § 31 — Jurisdiction of Commission.

1. The Commission has jurisdiction over public utility service, and that jurisdiction is paramount, subject only to judicial review, p. 22.

Service, § 59 — Jurisdiction of Commission — Service curtailment — Shortage of gas supply.

2. The Commission has power to authorize proper curtailment or refusal of gas service to new customers during a shortage of supply, p. 22.

Service, § 146 — Curtailment during emergency — Shortage of supply.

3. A gas company faced with a possible shortage of supply should refuse to serve new commercial or industrial customers rather than domestic customers, since the former are in a better position to take care of their needs by other means than are domestic users, p. 23.

Public utilities, § 49 — Supplier of natural gas — Jurisdiction of state Commission.

Statement that a wholesale supplier of natural gas is not a public utility subject to the jurisdiction of the Montana Commission, p. 22.

Intercorporate relations, § 8 — Jurisdiction of Commission — Contract for gas supply.

Statement that the Montana Commission does not have jurisdiction over contracts by a utility for the purchase of gas, p. 22.

Franchises, § 12 — Jurisdiction of Commission.

Statement that the Montana Commission has no jurisdiction over contracts or franchises between a municipality and a public utility, p. 22.

By the COMMISSION: The above entitled matter came on regularly to be heard in the City Hall in the city of Havre, Montana, commencing at 10 o'clock A.M. on the 18th day of April, 1950.

APPEARANCES: Max P. Kuhr, Attorney-at-Law, Havre, Earl H. A. Isensee, Attorney-at-law, Minneapolis, Cecil W. Smith, Vice President of the

Montana Dakota Utilities Company, Minneapolis, F. R. Gamble, Treasurer of the Montana Dakota Utilities Company, Minneapolis, W. L. Hayes, Secretary, of the Montana Dakota Utilities Company, and Ray Fleming, Division Manager, Montana Dakota Utilities Company, Havre, all appearing for the Montana Dakota Utilities Company.

MONTANA PUBLIC SERVICE COMMISSION

Protestants: B. W. Thomas, Chinook, appearing for the City Council of Chinook; W. W. Cassel, Havre, appearing on behalf of the Havre Chamber of Commerce; B. O. Clark, Havre, appearing for self; J. S. Boyer, Havre, appearing for self; D. J. Sias, Chinook, appearing for the city of Harlem and self; Jess L. Angstman, Havre, appearing for the City Council and as Mayor of the city of Havre; Hugh T. Schillin, Chinook, appearing for self.

OTHER APPEARANCES: Edwin S. Booth, Secretary-Counsel, appearing for the Board.

By the COMMISSION: The Montana Dakota Utilities Company furnishes public utility gas service in Havre, Chinook, and Harlem, Montana. The Commission received complaints that the company was refusing new service connections in the area. On request for information the company advised in substance, that the gas reserves available to it were not considered adequate to provide for new patrons without impairing service to present users. The Commission had not approved any curtailment of service. On receipt of this information the Commission on its own initiative set a public hearing to investigate the facts and determine whether the company should be ordered to furnish gas to all applicants.

The following facts appear from the evidence offered.

The Montana Dakota Utilities Company (hereafter referred to as the Utility) is the successor of previous operating concerns furnishing gas service in Havre and Chinook. It initiated service in Harlem. The com-

pany, so far as these three towns are concerned, is solely a distribution company. Gas is purchased from the Montana Gas Corporation (hereafter referred to as the supplier), the present producing and supplying company. The gas is supplied at the city gates of Chinook and Havre and from the field lines at Harlem under contracts now existing between these two companies.

The Utility contracts to purchase all gas from the supplier as long as it can meet the daily maximum demands during the life of the Bowes and Box Elder Fields. These fields are located near Havre and Chinook and are connected by pipe line with Havre, Chinook, and Harlem. The supplier reserved the right to furnish gas to the Utah Idaho Sugar Company at Chinook and the Great Northern Railway Company at Havre. In the event that the supplier cannot meet the maximum daily demand and the Utility brings in gas from other sources because of inability of supplier to meet the demands, supplier will be entitled to furnish half of the annual demand of the three towns.

The sales of the supplier to the sugar company and the Great Northern amount to about one third of the total requirements of Chinook and Havre. The contract with the sugar company continues until 1957 and cannot be avoided. The Great Northern contract is subject to cancellation annually. These two accounts amount to about 45 per cent of the suppliers revenue and any loss in revenue due to discontinuance or curtailment of sales would have to be compensated for by additional revenues from sales to the Utility.

A report of Ralph E. Davis, petro-

RE MONTANA DAKOTA UTILITIES CO.

leum engineer, made on data furnished in 1943 and brought to date as of January 1, 1948, from production reports, was offered. His report as of that date indicated that the proven reserves available to the company amounted to about fifteen years supply on their existing volume of use. This supply, of course, would be increased by any curtailment of industrial sales by the supplier. Information furnished by the Utility and by the supplier shows that the amount of reserves which can economically be delivered from the field is estimated at five to seven years additional. In order to extend the life of the supply to the Utility it will be necessary for the supplier to develop additional supplies.

Curtailment of sales by the supplier to the sugar company to the extent possible under the contract and subsequent agreements and curtailment of sales to the Great Northern will decrease the income of the supplier. The construction of new facilities and the exploration for additional supply will require large sums of money. Some additional peak load supply may be furnished by rearrangement of field lines and some additional equipment. Such action will not extend the life of the field.

During the winter of 1948-49 there was a shortage of supply to meet peak-load demand during prolonged cold weather. This condition likewise existed in the season of 1949-50. There are three commercial customers who have standby equipment. On occasions when the supply was inadequate the sugar company and the Great Northern curtailed their use and the three customers having standby

switched to that service. Notwithstanding this it was necessary to cut off the schools at times.

The supplier and the Utility started to negotiate new contracts which would increase the supply to the Utility. The negotiations commenced in 1948 but have not yet resulted in new contracts. The new contracts would undoubtedly provide for increased compensation to the supplier. The Utility stated that it is agreeable to asking the Commission for higher rates, all to accrue to the benefit of the supplier. A campaign to determine the public attitude to such an increase was conducted during 1949, but in view of the fact that the contract negotiations were not complete no further action was taken on the rate increase. No question regarding rates is being considered in this case.

The franchise with the city of Havre contains a clause providing for cancellation of the present franchise and option to purchase by the city in the event rates are increased. In addition to modification of this clause the Utility testified that extenions of the present franchises were necessary in order to make plans for future development of gas supply. Negotiations relating to the franchise have also been carried on but no definite action has been taken.

So far as supply of gas from other sources than the present supplier is concerned, the Utility stated that with the addition of gas from Wyoming to the Baker-Bowdoin system adequate supplies are available at Bowdoin. Because of the present contract and franchise provisions construction of lines from this field to the three towns is

MONTANA PUBLIC SERVICE COMMISSION

not presently practical but is being studied by the company.

Because of the probability of inadequate supply for present consumers the Utility issued instructions to its employees not to accept applications for new space heating. This action was to protect the present users and was based on the experience of the last two winters. If additional supplies during peak demand can be furnished by the supplier then the curtailment will not be considered necessary.

Representatives of the cities of Havre, Chinook, and Harlem and various groups and individuals appeared in protest to the curtailment. The curtailment of new users makes it impossible for builders of new houses to determine what action to take in regard to equipment. These representatives testified that the company in order to meet its utility obligation

should complete negotiations to permit acceptance of all applications. On cross-examination it was developed that the 1949-50 heating season was more severe than normal. There are about 25 or 30 applications for space heating service which have been refused.

Exhibits offered by the Montana Dakota Utilities show that there has been a substantially constant annual increase in domestic and commercial users since 1945. There were 2164 domestic users in 1945 and in 1949 there were 2738. In 1945 there were 416 commercial accounts and in 1949 there were 512 users. There are 15 industrial consumers. No unusual additional demand for the next year was predicted but the normal growth will probably continue. The volume of sales of the Utility by classes of service (thousand cubic feet) for the three towns are as follows:

Class	Volume Sales by Classes of Service (mcf)				
	1945	1946	1947	1948	1949
Residential	426,650	428,655	469,325	490,283	529,368
Commercial	340,239	343,468	377,472	387,152	421,767
Industrial	25,971	39,637	42,299	42,803	46,187
Total	792,860	811,760	889,096	920,238	997,322

The company testified that its present purchases are about 1,100,000,-000 cubic feet.

We first want to point out that the Montana Gas Corporation is not now a public utility and is not now under the jurisdiction of the Commission. Likewise, the matter of purchase of gas and entering into contracts by a utility is not a matter within our jurisdiction. We do not, therefore, have any control or jurisdiction over the matter of the completion of contract negotiations. The Commission likewise has

no jurisdiction over the contracts or franchises between the city and the Utility.

Considerable evidence was offered as to need for increased rates to provide additional supply. This case does not involve rates and if an application for increases is made, decision will depend on the evidence offered them. Nothing said herein is to be interpreted as indicating the action to be taken on any such future case for change in rates.

[1, 2] The Commission does have

RE MONTANA DAKOTA UTILITIES CO.

o per jurisdiction over rates charged by the
s. Utility and service furnished by it.
eloped Sections 70-101 to 70-135, R. C. M.
n was 1947.) In so far as these matters are
re a concerned the jurisdiction of the Com-
space mission is paramount, subject only to
en re judicial review.

State ex rel. Billings v. Billings Gas
Co. 55 Mont 102, PUR1918F 768,
173 Pac 799; Great Northern Utili-
ties Co. v. Public Service Commission,
88 Mont 180, PUR1930E 134, 293
2164 Pac 294.

The regulation of service includes
authority to authorize in proper cases,
such as shortage of supply or facilities,
proper regulation for curtailment of
service, or refusal of service to new
customers.

Re Montana-Dakota Utilities Co.
(ND 1948) 75 PUR NS 129; Re
Michigan Consolidated Gas Co. (Mich
1948) 74 PUR NS 406; Automatic
Firing Corp. v. Laclede Gas Light Co.
(Mo 1947) 72 PUR NS 130.

From the evidence it appears that if negotiation for new contracts are successful, additional supply of gas will be available which will make present curtailment unnecessary. Under these conditions refusal to serve domestic users because of the possibility of lack of peak demand supply will work an undue hardship. There is no abnormal increase expected in domestic use. Unless people building new homes can install gas it will require them to make other installations even though in a short time adequate supplies will be available. Under these conditions the company should continue to serve domestic users for all purposes.

The evidence indicates that increases in use by commercial users

have increased about 20,000 thousand cubic feet per year. The commercial use in 1949 over 1948 was 34,615 thousand cubic feet. There has been no material change in industrial consumption during recent years.

[3] The commercial and industrial user is in a better position to take care of his needs by other means than is the domestic user. Until such time as the present shortage of gas is eliminated, or until the further order of the Commission, the company should refuse new commercial or industrial customers. The towns of Havre, Chinook, and Harlem are all supplied from the same fields and are treated as a single system. The restrictions should apply equally to all three towns.

We have pointed out that we did not have jurisdiction over the supplier or over the city as to franchise matters. The question of completing all arrangements between the two companies and between the utilities and the cities which will permit the acquisitions of new supply by the Utility is of interest to all parties. The companies, the cities and civic organizations and individuals should assist each other in bringing about early completion of the necessary steps to insure the accomplishment.

If necessary the Utility should make surveys to determine possible interruptible industrial and commercial service and take such other action as will insure the most dependable service possible for the area served. Any action taken should have prior approval of the Commission and should be reasonable and nondiscriminatory.

From the evidence and for the reasons stated the Board makes the following:

MONTANA PUBLIC SERVICE COMMISSION

Findings of Fact

1. That the Montana Dakota Utilities Company furnishes public utility natural gas service in the cities of Havre, Chinook, and Harlem, Montana.
2. That the gas distributed is purchased from the Montana Gas Corporation an independent company, not under the jurisdiction of this Commission.
3. That the gas fields serving the area have probable life of five to seven years at present volumes of withdrawal and can only be extended by additional exploration or by curtailment of service to individual industrial customers by the Montana Gas Corporation.
4. That during the winters of 1948-49 and 1949-50 there were times when the peak demand load of the Montana Dakota Utilities Company could not be supplied and curtailment of some services was required to protect the majority of the users.
5. That the cause of the present shortages may be met by additional installations and development of the fields and further exploration.
6. That the failure of new residents

to be able to obtain gas service results in additional expense of construction in order to provide different heating facilities and such expense will be wholly unnecessary if gas supply is made available. That from the evidence it appears that service to the expected domestic demand may be supplied on the gas now available.

7. That the shortage of gas is such, that until the further order of the Commission or such time as adequate gas volume may be delivered at times of peak demand, the company should not add new industrial or commercial accounts.

8. That every effort should be made by the utilities, the supplier, and the cities involved to complete all necessary arrangements and contracts to permit the development of additional gas supply.

The Board concludes as a matter of law that the Montana Dakota should serve all applicants of gas for all domestic purposes, including space heating, and that until the further order of the Commission or until adequate gas supply to meet peak demands is provided that applications for new industrial and commercial service should not be accepted.

MASSACHUSETTS DEPARTMENT OF PUBLIC UTILITIES

Re Northern Berkshire Gas Company

D. P. U. 8840
July 7, 1950

APPLICATION by gas and electric company for authority to increase gas rates; authority granted.

Return, § 16 — Gas rate increase — Operation at a loss.

1. A gas and electric company operating its gas business at a loss is entitled to increase gas rates to earn a return upon property devoted to the gas business, p. 25.

Return, § 71 — Gas and electric company — Loss in one department.

2. The Commission, in passing upon a gas and electric company's application for authority to increase gas rates, because the gas department shows a loss, may not consider electric rates since the earnings on electric service investment are not material to an investigation of the reasonableness of gas rates, p. 25.

Return, § 92 — Gas company.

3. A return of about 5.8 per cent was not deemed unreasonable for a gas company, p. 26.

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no evidence to introduce in opposition to the proposed rates.

[1, 2] Respondent serves with gas about 10,000 customers in the city of North Adams and the towns of Adams, Williamstown, and Clarksburg. It is a combination gas and electric company, having a total capital account of \$1,864,498.93 as of December 31, 1949, with outstanding notes payable of \$620,000. Its gas plant investment as of the same date was \$1,146,962.33, subject to a depreciation reserve of \$503,853.41. Its year-end statement for 1949 showed in its account for balance transferable to profit and loss on gas operations alone, a loss of \$46,498.50, after interest charges of \$6,296.38. The hearing on the merits of the proposal was, how-

MASSACHUSETTS DEPARTMENT OF PUBLIC UTILITIES

ever, held prior to the end of the year and the testimony on the basis of ten months actual and two months estimated was that the company would lose \$25,000 on gas operations, before interest. It makes very little difference which earnings figure is adopted, since it is quite apparent that we are required to permit the respondent upon application to increase its rates in order to provide revenues to earn a return upon property devoted to the gas business. No criticism was voiced at the hearings as to the respondent's expenses or service, the main interest of the protestants apparently being in ascertaining that there would be a simultaneous reduction in electric rates if the gas increase were granted. But we cannot, in these proceedings, consider anything except rates for gas service. Respondent's earnings on its electric service investment are not material to this inquiry. *Re Lynn Gas & E. Co.* (1947) D. P. U. 7642, 70 PUR NS 22. However, it may be noted that the respondent, after conference with the Department, has recently filed revised electric rates estimated to effect a reduction of over \$100,000 in its gross revenues, effective July 15, 1950.

Respondent's proposed new rates for gas are estimated to produce \$85,-850 annually in new revenue, divided \$71,500 to domestic customers and commercial building heating, and \$14,-350 to industrial and other commercial customers. It presently has six complicated rate schedules in effect. It is proposed to substitute therefor two simple rate schedules. For a normal domestic customer in North Adams using 2,000 cubic feet, the monthly in-

crease will be from \$3 to \$3.56, or about 18.7 per cent. The increase to a domestic customer using gas for other purposes also will amount to 74 cents at 5,000 cubic feet, an increase of about 11.4 per cent. This is respondent's first rate increase in many years. Its operating expense per thousand cubic feet (before interest, depreciation, and taxes) has increased from 99 cents in 1946 to \$1.25 in 1949, an increase of over 26.2 per cent. It is apparent, therefore, that respondent in these proceedings is attempting to adjust its rates more nearly to meet its increased out-of-pocket production costs.

[3] If the actual 1949 operating results are taken as an accurate forecast of 1950 figures, the new rates will net respondent an adjusted estimated net operating income of about \$33,000. Taking working capital at the company's own estimate in the amount of \$89,000, we find that respondent is entitled to earnings on a rate base in the amount of \$732,109. Income in the amount we have indicated would represent a return of 4.5 per cent on such rate base. Using the company's original estimate of \$25,000 net loss for 1949, this figure would be about 5.8 per cent. We cannot say that such a rate of return on property devoted to the public use is unreasonable. It may be noted that nonoperating revenues (merchandising and jobbing activities) have not been included in this computation. The 1949 annual return, as a matter of fact, reports a loss on merchandising of gas appliances in the amount of \$1,426.

While we have some hesitation in approving any increase in gas rates in the face of the proposed extention of natural gas into Massachusetts with its

RE NORTHERN BERKSHIRE GAS CO.

indicated savings in production costs, due, and its location is such that it
relief for respondent's situation in its may conceivably be some time before
gas operations is obviously long over- it is the recipient of these benefits.

FEDERAL POWER COMMISSION

Re Montana-Dakota Utilities Company

Docket No. G-1406
July 12, 1950

APPLICATION by a natural gas pipe-line company to operate radio facilities for intercommunication on its pipe-line route; dismissed for lack of jurisdiction.

Certificates of convenience and necessity, § 32 — When required — Natural gas pipe-line company — Auxiliary facilities.

A natural gas pipe-line company need not obtain a certificate to construct and operate radio facilities, consisting of base stations and mobile units of varying frequencies and capacities to provide intercommunication along its authorized pipe-line route.

By the COMMISSION: On June 5, 1950, Montana-Dakota Utilities Co. (Applicant) filed an application for a certificate of public convenience and necessity pursuant to § 7 of the Natural Gas Act, 15 USCA § 717 f, as amended, authorizing Applicant to construct and operate radio facilities, consisting of base stations and mobile units of varying frequencies and capacities to provide intercommunication along the route of the pipe line which was authorized by the Commission in Docket No. G-1229.

Section 2.55 of the Commission's General Rules and Regulations provides that for the purpose of § 7(c) of the Natural Gas Act, the word "facilities" as used therein shall be interpreted to exclude those installations which are merely auxiliary or

appurtenant to an existing transmission pipe-line system and which are installed only for the purpose of obtaining more efficient or more economical operation of authorized transmission facilities. Communication equipment is included within the examples given in the rule of such auxiliary or appurtenant installations.

The Commission finds:

The communication equipment described in the application falls within the scope of the installations described in § 2.55 of the Commission's General Rules and Regulations and no certificate is required for its installation and operation.

The Commission orders:

The application of Montana-Dakota Utilities Co. in Docket No. G-1406 be and the same is hereby dismissed.

WISCONSIN PUBLIC SERVICE COMMISSION

Re North Wisconsin Telephone Company

2-U-3286
August 14, 1950

APPLICATION for authority to establish flat rate switching charge for telephone service; granted.

Rates, § 571 — Telephone switching charges — Flat rate.

1. A telephone company performing switching service for a rural telephone company should apply a flat rate on a monthly basis instead of making a charge on a message basis where the nature of the use of service by each of the subscribers of the rural company is sufficiently similar to make a flat rate reasonable, p. 29.

Rates, § 572 — Telephone switching charges — Amount.

2. A rate of 75 cents a month for residence and 95 cents for business switching service to a rural telephone company was held to be reasonable and approximating the cost of such service, p. 29.

Payment, § 19 — Billing — Switched telephone service.

3. A telephone company performing switching service for a rural telephone company should bill the other company for charges instead of billing the subscribers of the other company, p. 29.

By the COMMISSION: The North Wisconsin Telephone Company, operating in and around the village of Mason, Bayfield county, on February 27, 1950, filed its application for authority to establish a rate of 80 cents a month per residential subscriber and one dollar a month per business subscriber for performing switching service for the Mason Rural Telephone Company. Notice of investigation and assessment of costs was issued March 20, 1950, and of hearing on April 20, 1950.

APPEARANCES: North Wisconsin Telephone Company, by Walter Swanson, owner, Mason.

In opposition: Mason Rural Tele-

phone Company, by Walter J. Anderson, Secretary, Mason.

The North Wisconsin Telephone Company is owned by Walter Swanson as sole proprietor. Applicant serves the village of Mason and the communities of Sanborn and Marenago, including the surrounding rural territory. The company has 9 urban business, 26 urban residence, 5 rural business, 64 rural residence or a total of 104 company-owned stations connected to the magneto switchboard located in Mason. In addition the utility performs switching service for the Mason Rural Telephone Company. The latter company has 30 stations in operation divided into 15 stations per line.

RE NORTH WISCONSIN TELEPH. CO.

[1-3] The rate for switching service was established by agreement between the companies in 1925 and provides that the North Wisconsin Telephone Company will receive 5 cents for each exchange message coming into the switchboard and all revenue from toll messages. The North Wisconsin Telephone Company under this agreement was to bill each subscriber of the Mason Rural Telephone Company individually.

Applicant proposes to apply a flat rate of 80 cents a month for residence stations and one dollar a month for business stations to all telephones switched for the Mason Rural Telephone Company. In addition the North Wisconsin Telephone Company would bill the Mason Rural Telephone Company and not the individual subscribers of the latter company.

When one telephone utility makes an agreement for interconnection with another utility, the compensation for services rendered should be billed between the utilities. The North Wisconsin Telephone Company has no control over the customers of the Mason Rural Telephone Company, and there are practical difficulties in billing and collecting. Such an arrangement imposes an unreasonable burden on applicant.

Likewise, the majority of rates for switching service in Wisconsin are on a flat-rate basis. Experience has proven that the cost of accounting for each message outweighs any advantages there may be in a message unit system in a manual exchange of the size operated by applicant. The nature of the use of service by each of the subscribers of the Mason Rural Telephone Company is sufficiently

similar to make a flat rate reasonable.

The Commission in the absence of specific data relative to traffic for the applicant will make a cost apportionment based on data in its files and in the annual report of applicant for the year ended December 31, 1950.

The Commission estimates the annual cost of switching exchange messages for the Mason Rural Telephone Company as follows:

	Per Station
Operator's wages	\$6.23
Other operating expenses	2.04
Fixed charges86
Total cost	\$9.13

The Commission finds:

1. That the present rate for switching service to the Mason Rural Telephone Company is unreasonable.
2. That a rate of 75 cents a month for residence and 95 cents for business switching service to the Mason Rural Telephone Company are reasonable and approximates the cost of such service.
3. That it is unreasonable to require the North Wisconsin Telephone Company to bill the individual subscribers of the Mason Rural Telephone Company.

The Commission concludes:

That an order be issued authorizing the rates as proposed herein.

ORDER

It is therefore ordered:

That the North Wisconsin Telephone Company withdraw its present schedule of exchange switching rates and substitute therefor the schedule of switching rates shown below and made a part hereof effective the first

WISCONSIN PUBLIC SERVICE COMMISSION

billing date subsequent to the date of this order.

Switching Service	Net Rate Per Month
Rural Multiparty	
Business	\$.95
Residence75

Switching Rules and Regulations:

1. Service station service is available to persons, acting in joint association, located outside the local base-rate area in territory within which telephone company-owned exchange facilities are not available. Arrangements with the association shall be made with a representative delegated by the association.

2. The association is required to provide station equipment and the connecting pole lines and circuits of types approved by the telephone company, and to maintain and use the facilities in such workmanlike and satisfactory manner as to enable the furnishing of service within the transmission, protection, and service standards established by the telephone company for similar lines and equipment. Termination of a service station line at more than one central office is not permitted, except as already established on the effective date of this tariff, nor may connection between service-station lines be made by means other than through the telephone company's central office. The use of coin-box equipment on service station lines is not contemplated, but may be permitted if suitable arrangements can be made to avoid operating complications.

3. Contracts will not be made with service-station companies where the circuits over which service is to be furnished extend more than 12 miles

from the central office to which they are connected, unless such arrangements as are necessary are made by the service station companies to insure satisfactory service.

4. The telephone company shall provide and maintain the necessary circuit between the central office and the base-rate-area boundary or the incorporated limits of the city or village, whichever distance is greater. The service-station association is required to provide and maintain the circuit facilities beyond.

5. At the rate for switching service specified in the local tariff, service stations are entitled to exchange switching service with all other stations connected with the exchange in which the service-station line terminates and to one directory listing in the alphabetical section for each subscriber, and a regular business listing in the classified section for business subscribers. Charges for switching and toll service shall be billed against the service station association and not against individual members, the representative of the association being held responsible by the telephone company for the payment of all accounts.

6. For switching service, service-station associations are required to pay as a minimum charge for each line the charge for five stations. Where any association has more than one line, all of its stations are considered collectively in determining the charge for the association. Extension stations connected to switched lines where permitted, are to be charged at the same rate as for main service stations.

7. Station equipment and apparatus may be leased from the telephone company. Such equipment, exclusive of

RE NORTH WISCONSIN TELEPH. CO.

local batteries, is repaired or replaced by the telephone company without extra charge, if delivered to the nearest central office. Service-station associations are required to bear the expense of local battery renewals.

8. Service-station or roadway service may be discontinued on any line or lines at the option of the telephone company when the service-station association neglects or refuses, after reasonable notice, to make such additions, replacements, changes, and repairs as may be necessary to place its line or

lines and equipment in condition satisfactory to the telephone company for furnishing adequate service of any regularly approved type that may be established by the telephone company for the exchange area in which the service stations are located.

9. Switching service-station companies shall issue bills monthly for local and toll service rendered and shall reimburse the company performing the switching for its portion of said bills.

INDIANA PUBLIC SERVICE COMMISSION

Leo C. Cassell et al.

v.

Indianapolis Power & Light Company

No. 22297
July 27, 1950

PETITION by consumers for establishment of special electric rates for the operation of heat pumps; dismissed.

Rates, § 354 — Electricity — Heat pumps.

A special electric rate for heat pumps is not justified in view of the load and demand characteristics of this service.

By the COMMISSION: On November 28, 1949, the secretary of this Commission acknowledged a petition dated November 15, 1949, filed by ten residents of the city of Indianapolis, asking that the Public Service Commission of Indiana investigate the matter of establishing a fair and equitable electric rate for users of domestic heat pumps.

The Commission instructed its engineering department to institute a study in this matter and report to them as to the characteristic of the load imposed upon the electric distribution system and to report on all matters that would come to its attention in making this investigation.

On February 17, 1950, Mr. W. F. Lebo, Chief Engineer for the Public

INDIANA PUBLIC SERVICE COMMISSION

Service Commission, transmitted to the attention of this Commission, a preliminary report on this subject and indicated that their study was continuing in order to get full operating data of the 1949, 1950 heating seasons.

On July 11, 1950, the Commission filed this petition on their docket and assigned the same to Docket No. 22297.

On July 24, 1950, Mr. W. F. Lebo, chief engineer, transmitted a final report signed by Mr. Herbert Hutchinson, supervising engineer for the Commission. The conclusions of the report are as follows:

"In conclusion it appears to be quite evident that there is no justification for a special electric rate for heat pumps. The reasons for this conclusion may be itemized as follows:

"1. There is no diversity of demands that would warrant an off-peak rate consideration.

"2. The annual load factor for heat pumps is lower than that for regular residential uses.

"3. The power factor for heat pumps is lower than that for regular residential uses.

"4. The heat pump load is very seasonal with its greatest loads occurring in the winter months when the peak loads of a utility are usually the highest.

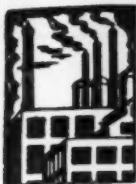
"5. There is no diversity of the demands of different heat pumps in a locality as found in the residential load.

"6. In Indiana, the need for summer air conditioning is limited to a few days and requires about one-half the horsepower needed for winter heating. This accounts for the low annual load factor on a heat pump."

After reading both engineering reports and being fully advised in this matter, the Commission is of the opinion that no public benefit would arise from holding a public hearing in this matter. The engineering report is quite complete and the Commission is further of the opinion that the load imposed upon the distribution system is of such character that it should not encourage an increase in this type of domestic heat by making available a lower electric rate.

The Commission is further of the opinion that the development of the equipment for this type of heat has not yet reached the stage of perfection where it is satisfactory for the ordinary residential user.

It is therefore *ordered* by the Public Service Commission of Indiana that the petition in this cause be dismissed without a public hearing and without prejudice.



Industrial Progress

A digest of information on new construction by privately managed utilities; similar information relating to government owned utilities; news concerning products, supplies and services offered by manufacturers; also notices of changes in personnel.



Texas Illinois Natural Plans to Increase Pipeline Capacity

TEXAS ILLINOIS NATURAL GAS PIPELINE COMPANY, of Chicago, has applied to the Federal Power Commission for authorization to construct facilities which would increase the authorized capacity of its recently approved pipeline system from 305 million cubic feet daily to a new total of 374 million cubic feet. Estimated total capital cost of the proposed new construction program is \$11,581,000.

New York State Natural Proposes New Gas Line

NEW YORK STATE NATURAL GAS CORPORATION, New York city, has asked the Federal Power Commission for authority to build 44½ miles of pipeline at an estimated cost of \$1,582,708. The proposed line of 16-inch and 18-inch diameter would link the company's natural gas transmission system in Pennsylvania with the Leidy gas field in Clinton and Potter counties, Pennsylvania. The company said the new line would enable it to take at least 60,000,000 cubic feet of gas a day from the Leidy field. The company has been taking gas from the field through a six-inch oil line which it had leased temporarily. The project would be completed by November 1st.

Diehl Elected President Of American Meter

THE board of directors of the American Meter Company announced the election of John C. Diehl as president. Mr. Diehl joined the staff of the American Meter Company in 1919 as an engineer, and was elected to the post of chief engineer in 1929. In 1934 he was made vice president.

Mr. Diehl is a member of the American Gas Association and Gas Appliance Manufacturers Association, and is the author of numerous technical articles and books on gas measurement.

Mr. Norton McLean, president of the American Meter Company since 1941, has resigned due to his health.

Indianapolis Pwr. & Lt. to Build \$8,000,000 Unit

INDIANAPOLIS POWER & LIGHT COMPANY announced recently that it will add an \$8,000,000 generating unit at its new White river power plant in Morgan county.

The 60,000-kilowatt turbo generator will be the fourth and largest at the new plant, part

of a six-year \$54,000,000 expansion program which the company began three years ago. The three other generators are rated at 40,000 kilowatt capacity.

When the four generators are completed, the company will have doubled its total generating capacity since World War II.

GAMA Table Shows Growth in Residential Gas Customers

GAS APPLIANCE MANUFACTURERS ASSOCIATION recently issued a table which illustrates the growth, by state, in residential gas utility customers since 1940, as compared with the growth in population and residential electric customers.

The table shows that the population of continental United States, 1950 over 1940, has increased 18,160,100 (13.8 per cent) and now totals 149,829,400.

Residential gas utility customers, on January 1, 1950 totaled 21,933,000, an increase of 33.5 per cent over the number served on the same date of 1940. Including LP gas residential customers, and looking at the gas industry as a whole, on January 1, 1950 there were 27,083,000 residential gas customers, an increase of 9,848,000, or 57.1 per cent over the residential gas customers of January 1, 1940.

During the same period, residential electric customers increased 51.1 per cent, or 12,580,400, and on January 1, 1950 totaled 37,179,700.

While figures are not listed on the table, latest estimates indicate there are 42,100,000 occupied dwelling units in the United States, 7,246,000 units, or 20.8 per cent more than in 1940.

McCulloch Motors Corp. Has \$2,500,000 Expansion Program

A \$2,500,000 expansion program now underway will increase the productive space and capacity of the Los Angeles plant of McCulloch Motors Corporation by 300 per cent, according to an announcement by Robert P. McCulloch, president of the company.

The plant area, which is now 75,000 square feet, will be increased to 324,000 square feet by the addition of eight new manufacturing bays, a new recreation-cafeteria building, and additional engineering and warehousing facilities. All of the eight new bays, comprising 150,000 square feet, will be devoted to production of power tool equipment.

These increased facilities will triple the present magnesium and aluminum diecasting capacity, will add an entirely new heat-treating

(Continued on page 34)

Mention the FORTNIGHTLY—It identifies your inquiry

department, and will expand the present gear-making, grinding, machining, and assembly output.

Completion of the new buildings is scheduled for June, 1951. When the expansion is completed, the number of employees will be increased to approximately 1,500.

United Gas Pipe Line to Build Facilities in Louisiana

UNITED GAS PIPE LINE COMPANY, of Shreveport, La., has received temporary authorization from the Federal Power Commission to construct approximately 16 miles of pipeline, a compressor station, and a dehydration plant to be located in Webster, Bossier and Ouchita Parishes, Louisiana, in order to augment the supply of natural gas to existing customers. The new facilities, estimated to cost approximately \$1,813,000 will have a daily capacity of about 100 million cubic feet of natural gas.

Bernz Introduces New Lightweight Blow Torch

WHAT is said to be the first basic style change in blow torch construction in 75 years was announced recently by Otto Bernz Company, Inc., Rochester, New York, with the introduction of a redesigned aluminum-tank torch weighing only slightly more than

2 pounds. The new model, 40 per cent lighter than competitive models, is especially designed for general maintenance and repair work.

Lazarus Enters Consulting Field in New York

ARTHUR LAZARUS, vice president of Day & Zimmermann, Inc., engineers, and a nationally known management consultant and budget authority, has announced his resignation to enter the consulting field in New York city.

Associated with Day & Zimmermann, Inc., for fourteen years, and an officer since 1941, he had a prominent part in negotiating the recently authorized study of the New York city municipally owned transportation system.

At Day & Zimmermann, Inc., Mr. Lazarus directed important assignments in the street transportation, railroad equipment, automotive accessory, paper, rayon, building products, steel, and retail fields, and was in charge of the firm's business in the middle west.

G-E Appointment

JAMES M. CRAWFORD has been named manager of the General Electric apparatus department's transformer and allied product divisions, J. W. Belanger, assistant general manager of the department, has announced.

Mr. Crawford, who has been manager of

(Continued on page 36)

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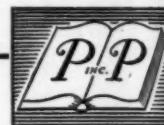
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A new "underground highway," 800 miles long, today is making an important contribution to the economic life of America's Big River Region.

It is part of Texas Gas Transmission Corporation's natural gas pipe line system that now covers 2400 miles in an area from Texas to Ohio. Through this system Texas Gas is able to transport over 660



million cubic feet of natural gas every day for use in homes and industries, an increase of 363 million cubic feet a day over one year ago.

In meeting the gas requirements of its service area, Texas Gas is proud to contribute to the Region's growth and to the further development of the nation's natural gas industry.

We are pleased to announce that prints of our recently completed documentary motion picture, "Underground Highway," will be made available on request.



the department's large motor and generator divisions, succeeds Robert Paxton, recently appointed manager of manufacturing policy for the company. Mr. Crawford will be located at the T.A.P. divisions headquarters at Pittsfield, Massachusetts.

Marmon-Herrington Receives Large Trolley Coach Order

THE MARMON-HERRINGTON COMPANY, INC., has just received a contract from the Chicago Transit Authority for what is said to be the largest order for trolley coaches ever placed by any transit company in the United States.

Three hundred forty-nine Marmon-Herrington trolley coaches have been ordered at an aggregate cost of \$5,979,417.

Delivery of the trolley coaches is to start around February 1st, 1951 and is to be completed by the end of the year. This equipment purchase is part of the Chicago Transit Authority's ten year \$150,000,000 program for modernizing its facilities and rolling stock.

In addition to its line of trolley coaches, the Marmon-Herrington Company also manufactures a line of motor coaches for the transit field and a complete line of all-wheel-drive trucks for the more difficult hauling operations.

Public Service Co. of Indiana Plans Expansion

THE Public Service Company of Indiana, Inc., recently announced it would begin immediate construction of a 180,000-kilowatt generating station on the banks of the Wabash river, 10 miles north of Terre Haute. The new plant will be known as the Wabash station.

In addition, a new 230-kilovolt transmission system will be constructed to transmit power to strategically located substations and eventually to industries, farms, and homes in 689 communities in 69 Indiana counties.

Scheduled for 1953 completion, the Wabash station has been necessitated by the state's industrial and rural electrification developments, company officials said.

The new station, will bring the company's total generating capacity to 730,000 kilowatts, approximately five times its 1940 capacity when a \$165,000,000 expansion program was initiated.

R-R Announces "Use-Purchase" Plan for Tabulating Equipment

A NEW "use-purchase" plan under which tabulating equipment may be purchased over a period of less than nine years at a lower cost than rental, was announced recently by Remington Rand Inc.

According to the manufacturer, the new plan, which spreads payments over 100 months and has a cancellation clause effective after the first year, is expected to revolutionize the distributing pattern for punched-card accounting equipment, which heretofore to a large extent has been based on rentals.

Under the plan it is less expensive, over any

period in excess of three years, to buy the equipment, than it is to pay rental. The cancellation clause makes it possible for the purchaser to replace equipment with newer models, as in the case of rented equipment, if it becomes more profitable to do so.

Savings through purchase, as compared with rentals, figured on a 10-year basis with service charges included, amount to more than \$20,000 on \$50,000 worth of equipment. In addition to an advantage of lower costs, pro-rated over a period of years, the purchaser also has the advantage of ultimately owning the equipment, rather than having to pay rent until it wears out.

Al N. Seares, vice president and general sales manager of Remington Rand, pointed to four basic points that make the new use-purchase plan of outstanding importance in the business equipment field:

- (1) It gives the buyer the option of either continuing to use the equipment or, at any time after the first year of use, changing to new equipment by cancelling the purchase contract, with a net savings under rental costs after three years of use.

- (2) It permits amortization of the cost over a period of years, with annual payments, the same as if rental were being paid, but at less cost.

- (3) It insures the buyer against any rise in annual payments, due to increased prices of equipment, which would not be true in the case of rented equipment.

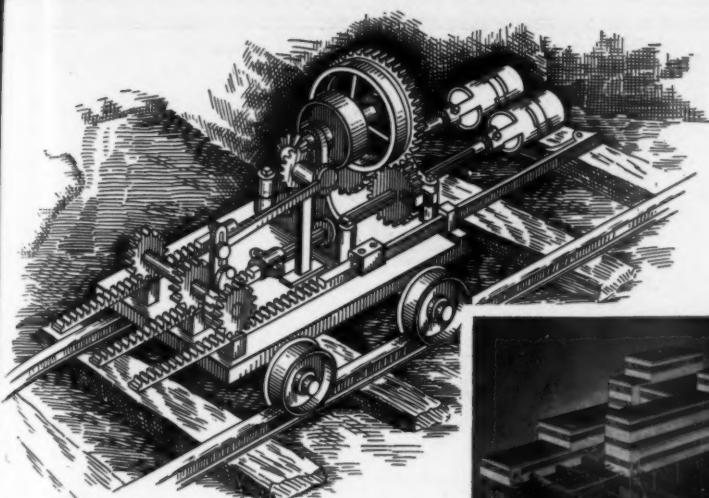
- (4) It terminates payments after the expiration of a specified period, except for mechanical services, instead of continuing payments indefinitely as in the case of rental.

Texas Illinois Natural Orders 25 Worthington Compressors

TWENTY-FIVE uniflow angle gas engine compressors have been ordered from Worthington Pump and Machinery Corporation by the Texas Illinois Natural Gas Pipeline Company, which recently dedicated its pipeline at ground breaking ceremonies near Hungerford, Texas. This pipeline will run from southeastern Texas to Joliet, Illinois.

On the original gas pipeline to Chicago, built by Natural Gas Pipeline Company of America in 1931 from the Texas Panhandle field to Joliet, Illinois, Worthington furnished fifty-seven 1,400 horsepower gas engine compressors—the total on the pipeline. When the completion of a duplicate parallel line was started in 1946 thirty-seven gas engine compressors of this same type, size and horsepower were furnished and a total of 104 of these twin tandem horizontal Worthington units are now operating on these two lines. This recent purchase through an affiliated company makes the third time Worthington has supplied the major requirements for these associated lines.

These twenty-five angle type gas engine compressors of 2000 HP and 10 cylinders each will be the total number of the initial installation on the pipeline of the Texas Illinois Natural Gas Pipeline Company, an affiliate of Natural Gas Pipeline Company of America.



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Mrs. Mabel Lytle, Fresno. Part of her savings invested in P. G. and E. stock paid her a return, and help build important projects like "Super-Inch" for the future. Women, by the way, own more P. G. and E. stock than do men.



Walter Teague, one of 16,572 P. G. and E. employees. He connected the new Wolf home to our mains—his 2500th installation in his 5 years with P. G. and E.

You can see by the expressions on the faces of P. G. and E. people that everybody was pleased and proud to have reached the one-million mark.

But what pleased all of us most is—our million gas customers get not only good service, but get it at rates among the lowest in the whole United States!

P.G. and E.

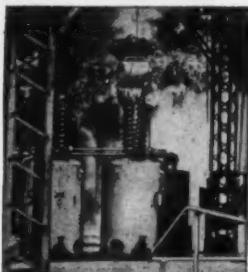
PACIFIC GAS AND ELECTRIC COMPANY



George E. Browning, Superintendent of Service, San Francisco. He started with P. G. and E. 39 years ago, was promoted to his new post on June 1. He sees to it that our 252,000 San Francisco customers get prompt service.



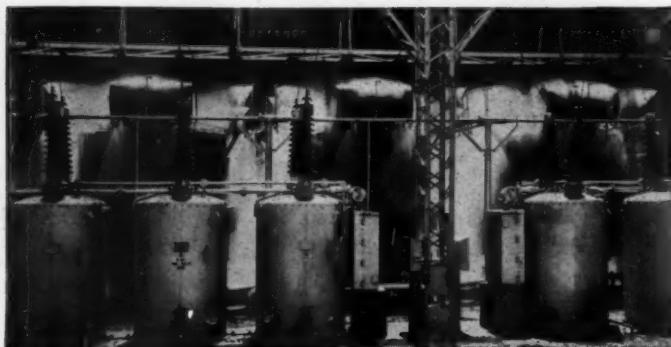
Alex Spratling, field man in charge of P. G. and E.'s famed \$3 million dollar "Super-Inch" Pipeline being built to bring Texas and New Mexico gas to P. G. and E.'s customers by January.



WITHOUT SPECIAL PROTECTION

 This transformer fire did \$50,000 damage at an electric power station.

MULSIFYRE NOW ON GUARD TO KILL OIL FIRES FAST



 Transformers at this electric power station are safeguarded by a Grinnell Mulsifyre installation. Fast, automatic spray protection is being demonstrated here.

When an oil fire breaks out in transformers protected by a Mulsifyre system, a battery of spray projectors puts out the fire . . . fast. Automatic, heat-actuated release devices assure quick operation. Extinguishment occurs within a few seconds after the emulsion-forming spray strikes the surface of the burning oil.

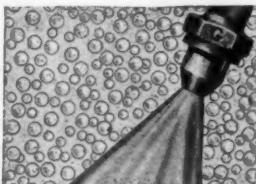
Mulsifyre projectors are approved by Underwriters' Laboratories, Inc. for extinguishing fires in flammable oils immiscible with water, wherever such oil is a fire hazard. There is no conductivity along the discharge of a Mulsifyre projector when the spray strikes conductors carrying high voltages.

Mulsifyre high-velocity projectors produce drops large enough and drive them fast enough to penetrate the flames without complete vaporization in flight, but limit their velocity so the surface of the burning liquid is agitated into an emulsion instead of passing through the oil without fire-extinguishing effect. After a period of time, the emulsion

breaks down, oil and water separate, and the can be reclaimed.

Mulsifyre systems have proven their effectiveness during sixteen years of extinguishing transformer fires. Today they protect hundreds of installations all over the world.

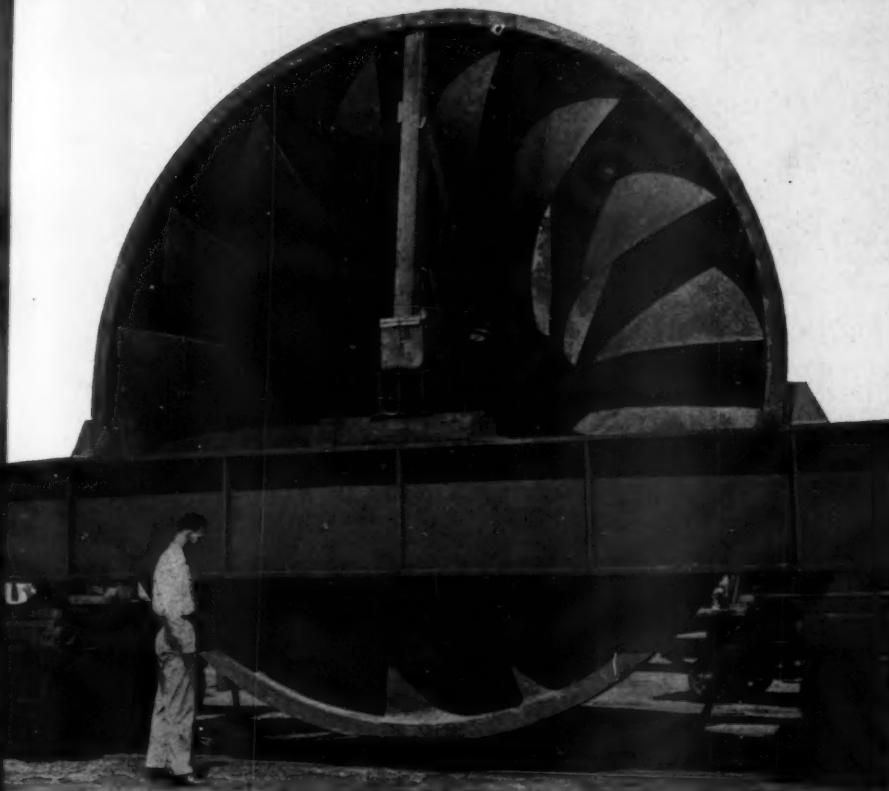
For information on Mulsifyre Systems or other Grinnell Fire Protection Systems write to Grinnell Company, Inc., Providence, R. I. Office in principal cities.



GRINNELL Mulsifyre

EMULSION—EXTINGUISHMENT OF OIL FIRES

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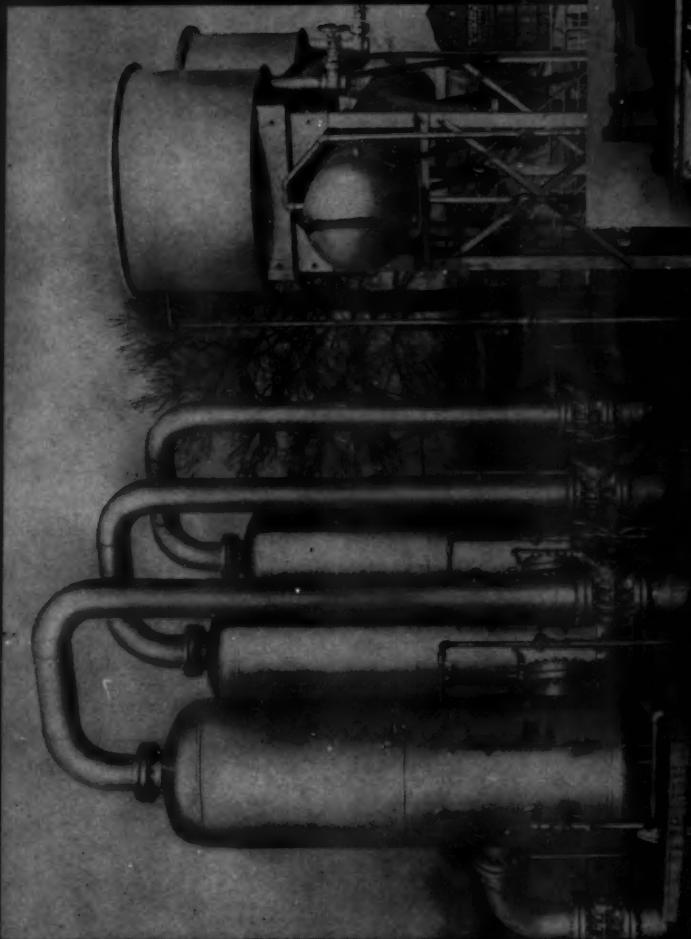
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H E Y
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This is the story that Portland General Electric Company of Portland, Oregon tells about capacitors:

"Our interest in capacitors goes back before the war. We made some system studies at that time which indicated that, as loads increased, conditions on our distribution system should be improved. In a moderate way, we had installed capacitors to test this out—to increase system capacity and to improve voltage levels.

"This experience served the company well during the difficult war years. Heavy loads taxed system capacity to the limit. Equipment to gain additional capacity was almost out of the question, and it was only by installing capacitors that we met demands.

"Since the war, loads have continued to increase, additional capacitors have helped make it possible to meet this demand. Not only have capacitors been installed on our own distribution system but by offering a

rate structure that makes capacitors an attractive investment to some industrial users we have been successful in improving the power factor of industrial loads.

"In hydroelectric areas such as ours, where large blocks of power must be transmitted over long distances, the generation of kilovars at or near the load is especially important.

"To date we have installed 97,630 kva in capacitors—which compared to our 409,000 kw peak of last December gives us a 24 per cent ratio between connected kvar and peak kw. Of these capacitors 59,380 kvar are fixed, 38,250 kvar are switched.

"Our experience with capacitors demonstrates they release system capacity inexpensively, permitting us to reduce our costs per kw delivered, they improve voltage conditions, they are installed quickly and are completely reliable. We consider them a desirable investment."

Apparatus Department, General Electric Company, Schenectady, New York

GENERAL  ELECTRIC

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HEY'VE TURNED ON THE GAS IN THE

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They've turned on the natural gas in the historic Hudson Valley. Housewives in Poughkeepsie, Newburgh, Kingston and other valley cities are discovering its advantages—its cleanliness, its convenience and its superiority as a household fuel.

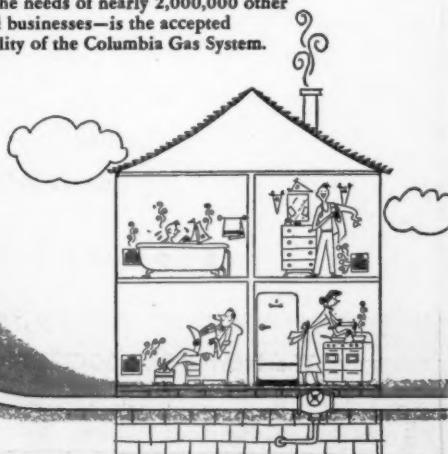
They'll soon discover its economy, too.

In a score of other communities in Maryland, Pennsylvania and Virginia—the story will be the same. For the Columbia Gas System, in order to meet local utilities' economic need for natural gas service, has spent five years and \$200,000,000 to bring it to them.

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At this modern station... **Exide-Manchex Batteries**

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- slotted plastic separators, impervious to chemical and electrical reaction.
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- heavy terminal posts with copper inserts for extra conductivity.

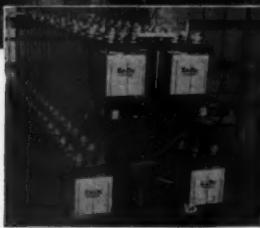
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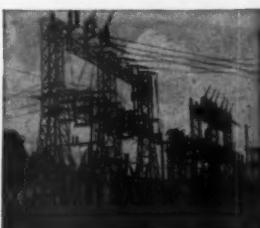
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60-cell Exide-Manchex switchgear control battery, EME-13, mounted on two, 2-step racks.



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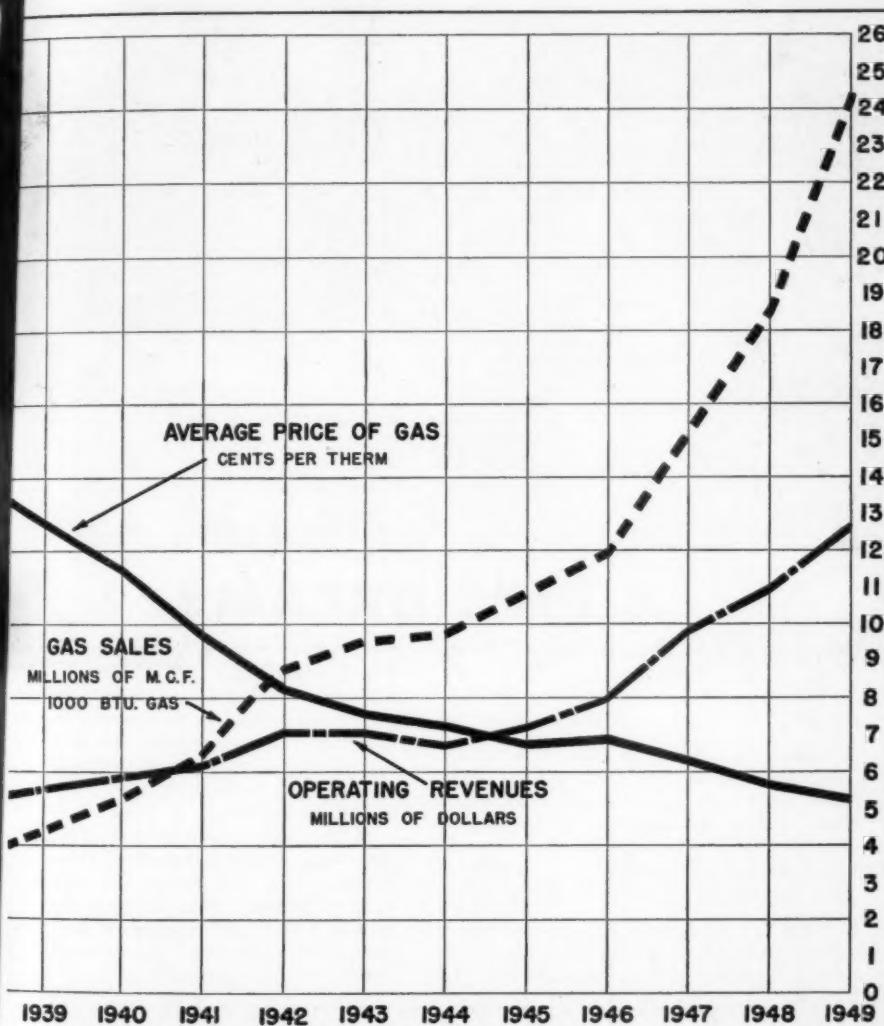
To meet the demands of aluminum manufacturers and other big customers such as steel, railroads, and public utilities, the coal industry is called upon to supply coal of particular kinds and grades. And, ever on the alert to give their customers an increasingly better product, America's progressive coal operators have built giant new preparation plants. Coal, processed in these plants and burned under the newest industrial boilers, produces four times as much power per ton as 30 years ago.

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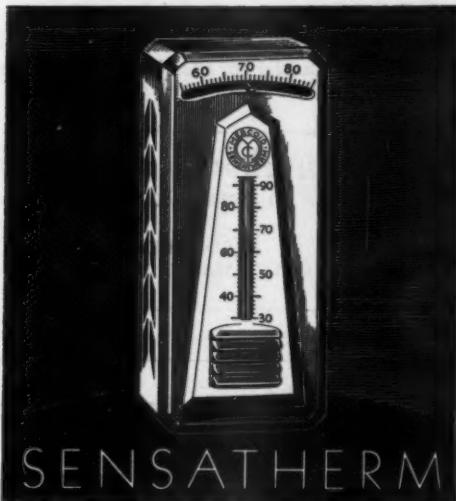
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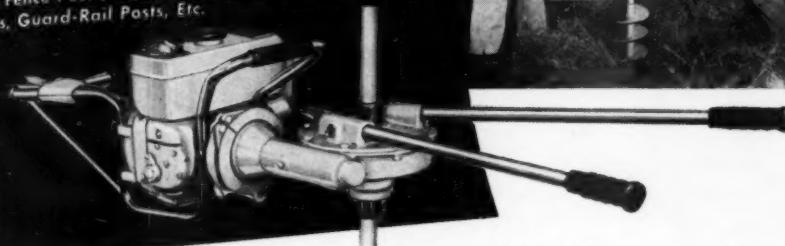
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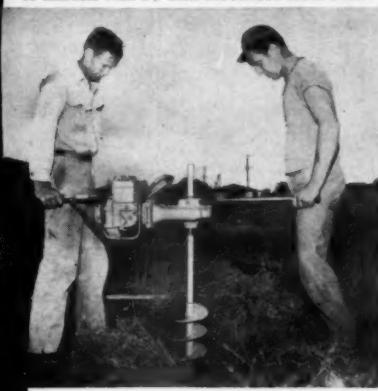
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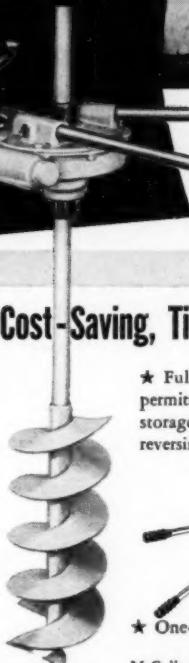
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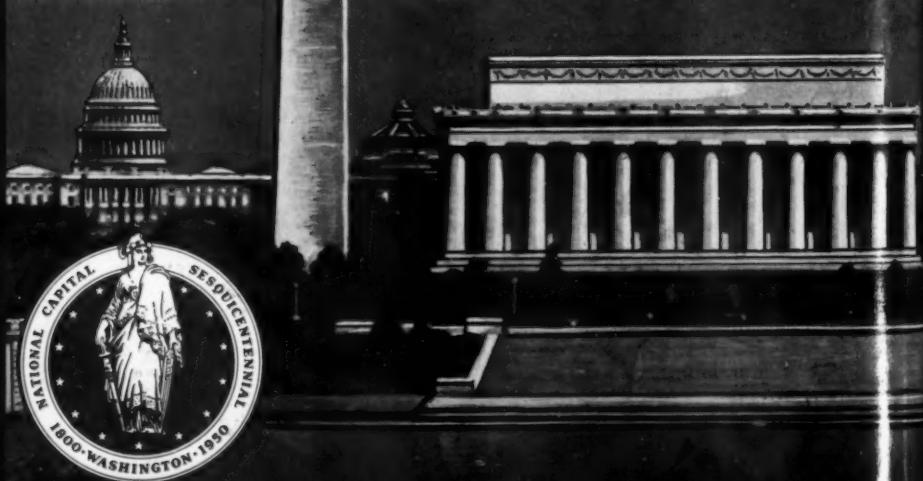
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**"To promote and develop the gas industry
... that it may serve to the fullest
possible extent the best interest of the
public."**

(FROM CONSTITUTION OF THE A.G.A.)

Achievement of that basic aim of the American Gas Association is proved by the high degree of service the industry now renders to community and country. It is our self-imposed task to help bring those principles to fullest effectiveness in the Nation's Capital.



WASHINGTON GAS LIGHT COMPANY